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# Changing consumption and production patterns

## Report of the Secretary-General

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## INTRODUCTION

1. The present report describes progress made in the implementation of the objectives set out in chapter 4 of Agenda 21 (Changing consumption patterns), 1/ with special reference to the relevant recommendations made by the Commission on Sustainable Development at its second session. 2/ The report was prepared by the Department for Policy Coordination and Sustainable Development as task manager for chapter 4 of Agenda 21, in accordance with arrangements agreed by the Inter-Agency Committee on Sustainable Development at its fourth session. It is the result of consultation and information exchange between designated focal points in United Nations agencies, governmental officials and a number of other institutions and individuals. Moreover, the report benefited from a number of intersessional meetings, especially the Oslo Ministerial Roundtable Conference on Sustainable Production and Consumption (6-10 February 1995), the Zeist Workshop on Facilities for a Sustainable Household (23-25 January 1995), and Massachusetts Institute of Technology/OECD Experts Seminar on Sustainable Consumption and Production Patterns (Cambridge, 18-20 December 1994).

2. The report starts with a general overview to identify the environmental, social and economic impact of present production and consumption patterns with a view to assisting Governments in establishing national priorities, followed by a summary of the results of recent projections and perspective studies. The relevance of data and information collection for monitoring, evaluating and reviewing performance is addressed next. An analysis of policy measures aimed at promoting sustainable production and consumption patterns follows, with a focus on the use of economic instruments. Finally, the report reviews progress by Governments, major groups and international organizations in implementing the Commission's decision. The document concludes by presenting proposals for a multi-year work programme for consideration by the Commission.

## I. GENERAL OVERVIEW

### A. Context

3. Policy measures which are directed at changing consumption and production patterns can have major impacts on many of the economic, social and environmental objectives of sustainable development. Such measures are designed to focus primarily on the microeconomic determinants of the behaviour of economic agents acting as producers and consumers. Other types of policies are needed for promoting economic growth and trade, changing demographic behaviour, developing human resources, alleviating poverty, promoting the transfer to developing countries of environmentally sound technology and financial resources, and managing natural resources. Policies in all of these areas and more need to be designed and implemented to achieve sustainable development.

4. A focus on changing consumption and production patterns is especially useful for integrating environmental and economic factors, for focusing on the demand side as well as the supply side of the economy, and for highlighting the need for policy measures that affect the behaviour of a large number of economic agents. Important for changing behaviour are measures which internalize

environmental costs to the economic agents responsible for them. But these need to be accompanied by measures which facilitate or magnify the responses of economic agents. Thus, a list of policy options might include: regulatory instruments, economic incentives and disincentives, social incentives and disincentives, facilities and infrastructure, information and education, and technology development and diffusion.

5. As a practical matter, many organizations and groups working in this area focus more narrowly or use a somewhat different organizing principle. Thus, the 1995 Oslo Ministerial Roundtable Conference on Sustainable Production and Consumption placed its main focus on the end-use of goods and services. Similarly, the Organisation for Economic Cooperation and Development (OECD) emphasizes the value-added that can be obtained from a new focus on the management of consumption (demand side) as a complement to existing work on production (supply side). The United Nations Environment Programme (UNEP), on the other hand, has a major programme for promoting cleaner production on a worldwide basis. The Netherlands, Norway and Germany have major programmes on product-oriented environmental policy which is built around the life-cycle approach. It utilizes policy instruments addressed to economic agents involved at each stage of the product cycle, from extraction, production and distribution to final use and disposal. The approaches mentioned above are all complementary, and the discussion in the report on policies draws on all of them.

## B. The environmental, social and economic impact of present production and consumption patterns

### 1. Integrated life-cycle approach

6. Patterns of production and consumption are driven by final demand, competition, innovation and financial flows. Final demand, in turn, is driven by the purchasing choices of individuals, businesses and public sector entities which themselves depend on such factors as basic human needs, tastes (influenced by advertising), per capita income and wealth, and relative prices. Meeting these consumption demands sets in motion a flow of materials and products, generating in the process wastes and by-products harmful to the environment and to human health. The process of waste generation and environmental degradation - from extraction of raw materials to final consumption and disposal - is complex.

7. Most products consumed by end-users involve varying degrees of processing. The framework outlined in table 1 is a highly simplified version of what should otherwise be a complicated diagrammatic presentation of material flows and their environmental and socio-economic impacts.

Table 1. Product life-cycle approach

| Stage | Environmental effects | Socio-economic impact |
|---|---|---|
| Extraction of raw materials | Land degradation, water contamination and deforestation/loss of habitat through mining, generation of extraction wastes and release of toxic chemicals | Loss of land titles, loss of revenues, marginal farming, food insecurity, exposure to health hazards |
| Processing, manufacturing; agricultural production | Air pollution, water contamination and land degradation caused by emissions, hazardous wastes, and toxic chemicals; soil erosion, sedimentation, salinity and water contamination caused by farming and agro-chemicals | Declines in factor productivity, efficiency losses, and exposure to health hazards |
| Distribution, consumption and disposal | Air pollution (including indoor), water pollution caused by air pollutants, municipal wastes and sewage | Loss of labour productivity, exposure to health hazards, and wasteful consumption habits/lifestyles |

Source: Adapted from Environmental Trends, Washington, D.C., Council on Environmental Quality, 1989).

8. Several features are worth noting. First, the framework indicates that resource production and consumption is a multistage process, with each stage associated with certain types of environmental degradation. An immediate corollary of this integrated life-cycle approach is that each stage should be regarded as an integral part of a whole interrelated process, with changes at one stage yielding effects at other stages. For instance, establishing manufacturers' responsibility for some aspects of disposal at the end of product life cycles may influence design of the product and packaging material, thus integrating waste avoidance into the production process.

9. Secondly, by setting out the stages of resource production and consumption, the framework also provides the necessary structure for taking a closer look at the associated environmental, social and economic effects. In some instances, the environmental impact at the relevant stages may be quantified. For example, it was estimated that in the late 1970s the United States generated approximately 2,500 million tons of wastes per year in the extraction of raw materials, 250 million tons of industrial wastes in the processing and manufacturing of products, and 190 million tons of municipal wastes and sewerage in final consumption. 3/ A decade later, a more recent estimate suggests that in the late 1980s, the municipal wastes generated in the United States rose to

208 million tons per year, averaging 864 kilograms per capita, whereas industrial wastes increased to 760 million tons (see table 2). 4/

10. The present data on the amounts of wastes generated in OECD countries in the late 1980s, shown in table 2, reveal large variations among them. Such variations cannot be accounted for merely by the differences in the level or structure of industrial production and consumption. As far as production is concerned, the use of input and materials (intense or otherwise) and the adoption of technologies (i.e., whether they are environmentally sound or not) may well determine both the level of industrial waste generation and the chemical and physical properties of products, with implications for the use and disposal stages. As regards consumption, recent experiences in waste separation at the household level show that waste separation by households helps significantly to reduce municipal waste and decrease the need for new landfills or incinerators.

Table 2. Municipal and industrial wastes generated in OECD countries, late 1980s

| Country | Municipal waste | | Industrial waste | |
|---|---|---|---|---|
| | Thousands of tons | Per capita (kilograms) | Thousands of tons | Per unit of GDP a/ |
| Canada | 16 400 | 632 | 61 000 | 155 |
| United States of America | 208 800 | 864 | 760 000 | 186 |
| Japan | 48 300 | 394 | 312 300 | 235 |
| Australia | 10 000 | 681 | 20 000 | 146 |
| New Zealand | 2 110 | 662 | 300 | 15 |
| Austria | 1 730 | 228 | 13 260 | 211 |
| Belgium | 3 080 | 313 | 8 000 | 104 |
| Denmark | 2 400 | 469 | 2 400 | 41 |
| Finland | 3 000 | 608 | 12 700 | 221 |
| France | 17 000 | 304 | 50 000 | 89 |
| Germany, Fed. Rep. of | 20 230 | 331 | 61 400 | 95 |
| Greece | 3 150 | 314 | 4 300 | 123 |
| Ireland | 1 100 | 311 | 1 580 | 87 |
| Italy | 17 300 | 301 | 43 700 | 94 |
| Netherlands | 6 900 | 467 | 6 690 | 50 |
| Norway | 2 000 | 475 | 2 190 | 35 |
| Portugal | 2 350 | 231 | 6 620 | 292 |
| Spain | 12 550 | 322 | 5 110 | 27 |
| Sweden | 2 650 | 317 | 4 000 | 37 |
| Switzerland | 2 850 | 427 | .. | .. |
| United Kingdom b/ | 17 700 | 353 | 50 000 | 146 |
| Total | 420 000 | 513 | 1 430 000 | 146 |

Source: Environmental Indicators (Paris, OECD, 1991).

a/ Tons per $10 million.

b/ England and Wales only.

## 2. Trends and issues in resource consumption and production

11. Within the framework outlined above, we proceed to examine some specific material groups. Bearing in mind the sectoral clusters to be addressed by the Commission at its third session, these included not only food and agricultural products and forest products but also energy and metals and minerals.

### Energy 5/

12. Since the Industrial Revolution, economic activity has become increasingly dependent on energy use. Commercial demand for energy grew rapidly during the 1950s, registering an average annual growth rate of 4.9 per cent. It accelerated to 5.6 per cent in the 1960s, slowing down to 3.5 per cent in the 1970s, reflecting the dampening effect on demand of oil price increases. The 1980s witnessed a continuing slow-down in the growth rate, averaging 2.0 per cent annually. World wide, commercial energy supply accounted for about 88 per cent of total consumption, although more than 2 billion people in developing countries depend on non-commercial fuels (basically fuelwood and agricultural residues). 6/

13. In terms of economic groupings, the share of the industrialized countries of fossil fuel consumption (the principal sources of commercial supply) declined to less than 50 per cent of the world total between 1961 and 1990. This was accompanied by a dramatic fourfold increase in developing countries and substantial increase in the former centrally planned economies (by a factor of 2.4). 7/ In per capita terms, the absolute consumption of fossil fuels in developed countries outstripped by a factor of 9 the consumption level in developing countries, as is evident in table 3.

Table 3. Fossil fuel consumption

(Gigajoules/person)

| | 1961-1965 | 1966-1970 | 1971-1975 | 1976-1980 | 1981-1985 | 1986-1990 |
|---|---|---|---|---|---|---|
| Industrialized countries | 115.82 | 142.53 | 165.70 | 169.52 | 153.81 | 160.06 |
| Developing countries | 7.37 | 8.26 | 10.34 | 12.91 | 14.53 | 17.28 |

Source: World Resources, 1994-95 (Washington, D.C., World Resources Institute, 1994).

14. From the standpoint of the flow of resources, production and consumption of fossil fuels give rise to a wide range of environmental degradation. In the extraction stage, large quantities of solid and hazardous wastes are generated and released into the environment, requiring large tracts of land for disposal. Surface mining may disturb or destroy natural habitats. Acid mine drainage may

contaminate surface and ground water and reduce or eliminate aquatic life in surface-water streams. In the processing and refining phase, environmental damage may occur as a result of treatment and refining operations. Fossil fuel consumption in electricity generation and vehicle transport are associated with air pollution and the emission of greenhouse gases, including the generation of residuals like carbon monoxide (CO), nitrogen oxides ($NO_x$), sulfur oxides ($SO_x$), sulfur dioxide ($SO_2$) and total suspended particulates (TSP). It was estimated that in 1990 world wide 99 million tons of sulfur oxides ($SO_x$), 68 million tons of nitrogen oxides, 57 million tons of suspended particulate matter and 177 million tons of carbon monoxide were released into the atmosphere as a result of human activities. The OECD countries accounted for about 40 per cent of the $SO_x$, 52 per cent of the $NO_x$, 71 per cent of the CO and 23 per cent of the suspended particulate matter. 8/ In developing countries, added to these effects are the indoor air pollution problems caused by dependence on biomass fuels as energy sources. Women and children are particularly vulnerable to the health hazards posed by severe indoor air pollution.

15. Despite encouraging progress achieved over the past two decades in energy efficiency, especially in industrialized countries, global demand for commercial energy is projected to continue to grow in the coming years, with the main momentum coming from developing countries. One conservative estimate by the Department of Economic and Social Information and Policy Analysis of the United Nations Secretariat suggests that between 1990 and 2010 world energy consumption is expected to grow by 42 per cent, or an average annual rate of 1.8 per cent. About two thirds of the incremental energy demand is likely to occur in developing countries. 9/ Manufacturing, which consumes a large share of commercial energy supply, grew by an average annual rate of 6.0 per cent in developing countries in the 1980s and is expected to grow threefold in the next 20 years. 10/ However, this seemingly relentless increase may also be partly attributed to widespread subsidies. It was estimated that world wide, subsidies for electricity and fossil fuels, excluding the former Soviet Union, totalled $106 billion in 1991. 11/ These subsidies artificially lowered energy prices, leading to inefficient and excessive consumption, with attendant effects on emissions of pollutants and greenhouse gases. The World Bank further estimated that removal of world energy subsidies would lead to a net reduction of 5 per cent in global emissions of carbon dioxide. In developing economies, energy subsidies also disproportionately benefit the well-to-do who consume far larger amounts of energy than the poor.

16. Energy consumption by the transport sector - mainly road transport - is a major environmental concern. Some estimates suggest that road vehicles consume as much as half of the world's oil production. World wide, some 10 million cars and 5 million buses and trucks are added to the world vehicle fleet every year. About 80 per cent of the global car population is located in the industrialized world. Although in absolute terms most of the vehicle growth has occurred in industrialized countries, many developing countries are experiencing high growth rates in vehicle numbers.

17. Despite gains in fuel efficiency achieved since the 1970s, transport's share of total world oil consumption has continued to increase as a result of growth in the vehicle fleet and in the traffic volume. This has translated into mounting environmental degradation. Emissions from transport represent an

increasing share of overall emissions caused by human activities. In OECD countries, 70-90 per cent of carbon monoxide (CO) emissions originate from transport, mainly motor vehicles. The transport sector also accounts for 40-70 per cent of nitrogen oxide ($NO_x$) emissions. At least 50 per cent of atmospheric lead emissions originate from automobiles. 12/ When these and other emissions are concentrated at a local level, often in congested urban areas, they give rise to serious health hazards, as witnessed routinely in many large cities in both developed and developing countries. While measures like improved vehicle characteristics, better urban planning and traffic regulation have proved successful in reducing the amount of harmful emissions, sustained changes will have to come from user/consumer behaviour. Increasing use of public transport and car-pooling, for example, are some of the measures now being pursued in some countries to bring about long-run improvements in ambient air quality and hence the quality of life. In most cases social and economic instruments have been applied to catalyze and accelerate such behavioural changes (see sect. E below).

Metals and minerals

18. The past three decades have witnessed consumption trends of metals and minerals similar to those of energy. One estimate suggested that between 1961 and 1990 world consumption of primary aluminum, copper ore, lead ore, manganese ore, nickel ore, phosphate rock, crude steel, tin ore, and zinc ore rose by 120 per cent, or 2.7 per cent per year. Increases were most marked in low-income economies, where consumption grew by 360 per cent during the same period to meet demands of manufacturing industries. However, in the 1980s, annual growth rates of consumption for the world as a whole slowed to 1.5 per cent. 13/

19. The same period also witnessed a similar growth in the share of developing economies in the world total consumption of metals and minerals. As a group, the share of developing economies rose from 37.9 per cent in 1961 to 52.1 per cent in 1990. During the same period, consumption by industrialized countries fell from 58.7 per cent to 43.6 per cent, although on a per capita basis consumption in low-income economies remained small in comparison with the level in industrialized countries. 14/ A significant phenomenon observed during this period was the decline in the intensity of metal use in industrialized countries, pointing to the impact on demand of long-term trends in technological innovations, material substitution and in reuse and recycling of materials. For example, technological progress has made it possible to make thinner metal beverage and food containers (mainly aluminum and tinplate). In the area of material substitution, plastics, ceramics, and composites have increasingly been used in automobile manufacturing to produce lighter and more fuel-efficient cars. 15/ As regards reuse and recycling, one recent report by UNCTAD suggests that the recycling rate for most important industrial commodities, including aluminum, copper, nickel, lead, tin, and zinc varies between 25 and 50 per cent for developed countries and 2 and 40 per cent for developing countries. Improving product design and material substitution are likely to reduce further the intensity of metal use. This pattern also raises the question of how the relevant technologies can be adapted and introduced on a wider basis, benefiting those developing countries in the course of modernizing their manufacturing industries.

20. The environmental effects of the production and consumption of metals and minerals can also be identified by using the analytical framework outlined above. These effects are similar to those related to the mining and processing of fossil fuels (though not at the consumption stage). In the extraction stage, in addition to large quantities of solid waste, mining operations can cause land degradation and freshwater pollution, through the accumulation of toxic trace metals in soil and discharge into streams. Air pollution may result from smelting and refining operations. Since extraction and refining operations may often take place in areas inhabited mainly by the poorer members of the population, these members make up the principal victims of any local environmental degradation. Experiences in some Latin American countries show that the potential income-earning opportunities presented by mining operations may simply not be adequate to compensate for the damage to the local ecosystems. Even when mining operations end, in most cases the environmental damage is likely to endure. This raises the issue of how natural resources should be valued and how enterprise accounts should be compiled so as to reflect not just private costs incurred but also external environmental costs. (On the issue of internalization of external environmental costs, see sect. E below).

Food and agricultural products

21. World wide, gross agricultural production grew by an average annual rate of 2.3 per cent during 1970 and 1990. Domestic demand increased at the same rate during the same period. As a group, developing countries increased production by 3.3 per cent per annum, while the annual growth rate in developed countries was lower, 1.5 per cent. However, at 3.6 per cent per annum, demand in developing countries grew faster than production, implying net imports over these years. With the exception of sub-Saharan Africa, production growth in per capita terms in developing countries remained positive during the period and is expected to be so in the coming years. 16/

22. Per capita food supply for direct human consumption registered similar growth rates, but with considerable variations among developing countries (see table 4). While East Asia increased per capita food supplies from 2,020 calories per day in 1969-1971 to 2,600 in 1988-1990, per capita calorie consumption in sub-Saharan Africa stagnated. As a result, the number of undernourished people in the region rose from 94 million in 1969-1971 to 175 million in 1988-1990. In contrast, significant reductions in the incidence of undernutrition were achieved in East Asia during the same period. For developing countries as a group, the number of undernourished people fell from 941 million to 781 million, and the share of population suffering chronic undernutrition declined from 36 per cent to 20 per cent.

Table 4. Food supply for direct human consumption

| | Per capita food supply (calories/day) | | Chronic undernutrition | | | |
|---|---|---|---|---|---|---|
| | | | Percentage of population | | Number of persons (millions) | |
| | 1969-1971 | 1988-1990 | 1969-1971 | 1988-1990 | 1969-1971 | 1988-1990 |
| 93 developing countries | 2 120 | 2 470 | 36 | 20 | 941 | 781 |
| Africa, sub-Saharan | 2 140 | 2 100 | 35 | 37 | 94 | 175 |
| Near East/ North Africa | 2 380 | 3 010 | 24 | 8 | 42 | 24 |
| East Asia | 2 020 | 2 600 | 44 | 16 | 497 | 252 |
| South Asia | 2 040 | 2 220 | 34 | 24 | 254 | 271 |
| Latin America and the Caribbean | 2 500 | 2 690 | 19 | 13 | 54 | 59 |
| Developed countries | 3 140 | 3 410 | | | | |

Source: FAO, "Agriculture: towards 2010" (C 93/24).

23. This overall progress notwithstanding, considerable gaps in food consumption remain between developing and developed countries, as can be seen from tables 4 and 5. The consumption gap in protein is even wider. For instance, while per capita consumption of beef and veal increased in both industrialized and developing countries over the past three decades, the consumption level in the former was approximately six times as high as in the latter. The increasing demand for meat and other livestock products has led to a wide range of environmental degradation associated with livestock raising and processing. Overgrazing contributes to soil degradation and desertification. In some industrialized countries, mechanized livestock farming has caused enormous manure disposal and water pollution problems. In developing countries, chemicals used in processing hides are often released into the air, freshwater streams, lakes, rivers and coastal areas, causing pollution and environmental degradation.

Table 5. Beef and veal consumption
(kilograms/person)

| | 1961-1965 | 1966-1970 | 1971-1975 | 1976-1980 | 1981-1985 | 1986-1990 |
|---|---|---|---|---|---|---|
| Industrialized countries | 24.53 | 27.37 | 28.59 | 29.65 | 27.69 | 27.17 |
| Developing countries | 3.98 | 4.06 | 3.84 | 4.21 | 4.05 | 4.29 |

Source: World Resources, 1994-95 (Washington, D.C., World Resources Institute, 1994).

24. While direct human consumption of cereals and other major crops leads to few environmental effects, the production stage has generated pressure - in many instances, severe pressure - on ecosystems. The increasing application of chemical fertilizers and pesticides has contaminated land and surface and ground water, and impaired human health. In some areas, agricultural fertilizers are among the principal sources of eutrophication of surface water and nitrate contamination of ground water. Among the harmful effects of pesticide use are threats to human health and reproductive capacity; development of pest resistance and the accumulation of chemicals in food chains. Some estimates suggest that about 50 per cent of the fertilizers used are lost from the soil system by leaching, runoff, and volatilization, whereas more than 90 per cent of pesticides do not reach the target pests. 17/

25. World wide, consumption of chemical fertilizers more than doubled over the past two decades, rising from 69 million tons in 1970 to 146 million tons in 1990. Consumption increased by 360 per cent in developing countries, as compared with 61 per cent in developed countries. The same period also witnessed the share of developing countries in world fertilizer consumption rising from 20 per cent in 1970 to 43 per cent in 1990. But the intensity of use (application of fertilizers per hectare) has been much higher in developed countries. 18/ The use of pesticides, measured in terms of sales, grew from US$ 7,700 million in 1972 to US$ 25,000 million in 1990 (1985 dollars). Some 80 per cent of the pesticides are applied in developed countries, although their use is increasing faster in developing than in developed countries (7-8 per cent as against 2-4 per cent per year). 19/

26. Inappropriate farming and land management practices constitute another major source of pressure on agro-ecosystems. Overgrazing of rangeland, mining of soil nutrients and ground water, poor management of irrigation schemes and farming of marginal lands - practices observed mainly in developing countries - have caused or exacerbated soil erosion and land degradation. In many developed countries, agricultural subsidies have provided incentives for overproduction, leading to the expansion of environmentally damaging agricultural activities at both the extensive margin (e.g., deforestation and reclaiming wetlands) and

intensive margin (e.g., overuse of agrochemicals and irrigation water). 20/ World wide, about 295 million hectares of land are strongly degraded (defined as the large destruction of the original biotic functions of land), of which 75 million hectares have been damaged by overgrazing and 83 million by improper land management. Another 910 million hectares of agricultural land are estimated to be moderately degraded, facing declines in productivity. Unless effective action is undertaken to protect and conserve the fertility of this portion of the earth's agricultural land, it risks being irretrievably lost. 21/

27. An important issue in food and agricultural production concerns land titles and property rights. Recent experiences have demonstrated that farmers' behaviour in land management is more environmentally friendly when they have well defined and secure titles to land. They are more willing to invest in soil fertility and water-efficient irrigation projects. When realized, the resulting increases in yields and harvest should also generate more income to farmers, assisting in food security and poverty alleviation.

Forest products

28. Forests are widely recognized as a highly concentrated and yet diverse source of the earth's natural wealth. They supply a wide variety of products, ranging from fuelwood for local inhabitants to commodities such as timber and rubber. The commercial value of forest products has been one of the driving forces behind the rapid destruction of tropical rain forests, disrupting the regenerative process of the earth in many locations. (Clearing the forest for crop and range land has been widely recognized as the other principal source of pressure on the forest.) The loss of biodiversity and the erosion in the services provided by forests - stabilizing topsoil, acting as watersheds, supplying fuel for local populations - are often the consequences of unrestrained logging for timber or clearing the forest for agricultural and livestock production.

29. World wide, the past three decades witnessed a doubling of the consumption of roundwood, a major forest product for commercial consumption. While the share of developing countries in total consumption increased, in per capita terms the level of consumption in industrialized countries continued to exceed the level in developing countries by a factor of approximately 2.5 (see table 6). The same pattern of consumption is observed in paper, another major forest product. While per capita consumption of paper averaged 45 kg world wide in 1990, the amount consumed in developed countries (150 kg) outstripped by far the amount in developing countries (10 kg). 22/

Table 6. Roundwood consumption
(Cubic metres/person)

| | 1961-1965 | 1966-1970 | 1971-1975 | 1976-1980 | 1981-1985 | 1986-1990 |
|---|---|---|---|---|---|---|
| Industrialized countries | 1.10 | 1.60 | 1.14 | 1.17 | 1.17 | 1.29 |
| Developing countries | 0.43 | 0.44 | 0.44 | 0.46 | 0.48 | 0.48 |

Source: World Resources, 1994-95 (Washington, D.C., World Resources Institute, 1994).

30. The consumption of forest resources, when not managed according to sustainability criteria, results in irretrievable loss of habitats and biological resources. Clearing forest for fuelwood and agricultural production and logging for timber has led to widespread deforestation and devegetation. Estimates of forest resources in the tropical regions suggest that in the three developing regions of Africa, Asia and Latin America and the Caribbean, a total of 16.9 million hectares of forest area was lost during 1981-1990. In many instances, policy failures have aggravated the situation. A typical example is the undervaluation of forest resources. In some cases, rents charged for logging are set well below the full value of forest resources, allowing loggers to reap super-normal profits, and spurring excessive logging. In sub-Saharan Africa and other tropical areas, clearing the forest for fuelwood and food production has been caused by a high incidence of poverty. One study suggested that in sub-Saharan Africa landless farmers are responsible for three fifths of the rain forest lost annually. 23/ But the loss of soil fertility and land degradation that may soon occur in the wake of the clearing of the forest often undermine the very fragile base for the survival of the poor, thereby perpetuating a vicious circle.

## C. Projections and perspective studies

31. Given existing physical infrastructure and lifestyles, achieving sustainable consumption and production patterns may take years or decades. To understand the dynamic interactions between human activities and environmental changes over the long term, the Commission at its second session also called on Governments to undertake projections and perspective studies so as to better appreciate the consequences of present policy stances on resource consumption and production and the possible impact of changing these policies. 24/ This section identifies some recent studies and describes their relevance to policy debate and formulation.

## 1. Studies at the international level

32. Projections and perspective studies at the international level are normally carried out by international organizations or academic institutions with the research funds and staff necessary for such studies. Typical examples include the long-range world population projections published by the United Nations which have long been the bench-mark studies in population dynamics, widely utilized in forecasts. Other studies, such as commodity outlooks prepared by the World Bank and United Nations agencies, have also been used in policy analysis. Perspective studies on future energy demand and on changes in reserves have been the subject of research and projections by several international agencies and academic institutions, including the International Energy Agency. In the 1970s, inspired by the report of the Club of Rome and report of the Bruntland Commission, a number of world models were developed to integrate economic and environmental processes.

33. More recently, modelling efforts have begun to focus on climate change and ozone depletion. For instance, assessment reports by the Intergovernmental Panel on Climate Change have provided projections of climate change through the year 2030. The scenarios presented by the Panel reports - the business-as-usual and alternative scenarios - have provided important stimulus to intergovernmental debate and have become part of the information basis underlying some of the most far-reaching policy changes and outcomes in recent years, in particular those on the emissions of greenhouse gases and energy consumption. The World Model, pioneered by Nobel Laureate Wassily Leontief and maintained at the Institute for Economic Analysis at New York University and at the United Nations, uses input/output and trade data to develop scenarios for 17 world regions, exploring a number of environmental issues, including the volume of $CO_2$ emissions. The OECD General Equilibrium Environmental model (GREEN) represents another major attempt at analysing $CO_2$ emissions and climate change. Based on input/output and trade data from individual countries, the model allows for a large and flexible regional disaggregation, making it well-suited for analyses of international competitiveness issues and the simulation of different kinds of regional and global agreements on reducing $CO_2$ emissions. 25/

34. An important perspective study in agriculture is the report prepared by FAO, "Agriculture: towards 2010". 16/ The most significant feature of this study lies in its integrated approach to agricultural production and future food supply, the impacts on natural resources and the socio-economic dimensions, including food security and hunger alleviation.

## 2. Studies at the national level

35. Projections and perspective studies at the national level, including sectoral studies on energy and commodity consumption, are available for most developed and some developing countries. However, studies focusing on environmental, social and economic impacts of resource consumption and production are confined to a limited number of countries. These are often done in connection with national environmental plans or strategies, accompanied by specific targets for fulfilment. For example, the National Environmental Policy Plan of the Netherlands incorporated the results of various studies on climate

change and set the national $CO_2$ emissions targets through the year 2000, together with the outlines of policy measures necessary for achieving the objectives. Similar procedures have also been applied to waste control and prevention. In 1993, a second national environmental policy plan was adopted, which revised, updated and further improved the first. It also further strengthened the implementation framework and introduced more specific measures aimed at achieving sustainable patterns of production and consumption, including a renewed emphasis on the flow of information between government, industry and consumers. 26/

36. Similar experiences have taken place in many other countries. In Finland, a national report on a new energy strategy sets ambitious targets for the reduction of emissions in the energy sector. Through tightening standards and administrative measures, the Government seeks to achieve by the year 2000 an 80 per cent reduction in $SO_x$ emissions from the 1980 level. The government also intends to stabilize $CO_2$ emissions and aims at stopping the $CO_2$ emissions growth by 2000. To achieve these targets, the Government has decided to adopt a new structure of energy taxation in 1994. Fossil fuels will be taxed, using a single carbon coefficient. In addition, a consistent tax rate proportional to the energy context will be fixed for all sources of primary energy except wood, wind power and waste.

37. In Canada, several provincial governments have also introduced specific targets in their strategies for future environmental protection. Alberta has adopted an Action on Waste programme directed at reducing the amount of municipal solid waste by 50 per cent by 2000. Manitoba has adopted a recycling programme aimed at recycling up to 75 per cent of household waste by 1996. At the federal government level, the Environmental Partners Fund, established under the Environmental Citizenship Initiative, has targeted part of its funding to assist community groups in carrying out composting and recycling projects.

### D. Actions and efforts to intensify and expand data collection

38. The preceding assessment of the trends and issues in resource consumption and the impact on our environment and society suggests that while developing countries are catching up in resource consumption and are expected to experience higher growth rates in the coming decades, in per capita terms significant consumption gaps remain between developing and developed countries. Narrowing these gaps, while protecting our natural resource base and ecosystems, poses a key challenge to achieving sustainable production and consumption patterns.

39. There is a growing recognition that without the necessary data on the trends in the environment and ecosystems, policy-making is likely to be impaired. Environmental monitoring will be haphazard if not based on reliable information on the sources and processes of environmental degradation. Remedial measures, such as technological improvement on production methods and changes in product design, will be difficult to conceive. Consumers will be unable to differentiate between products and will not be able to appreciate the need for changes in consumption habits and lifestyles. Aware of the importance of meeting the information requirement, the Commission at its second session called

on Governments to intensify and expand their efforts to collect relevant data at the national and subnational levels.

40. Since UNCED, many Governments and international organizations have initiated or intensified their effort at compiling comprehensive environmental information and monitoring data, including those on the social and economic variables having close bearings on the status and changes of the environment. In general, these efforts proceed at three levels - environmental monitoring; environmental resource accounting; and sustainable development indicators (SDI). Following the latest effort at changing consumption patterns, such as those initiated by Norway, Denmark, Sweden and the Netherlands, among others, a new information need is emerging - consumer information. Such information is expected to cover product content, the environmental impact of the product, environmental impact of consumption habits and lifestyles. In countries where community and citizen groups have launched "green" consumer movements, there is also a growing recognition of the need to collect and disseminate feedback information so as to evaluate and demonstrate progress in environmental quality arising from changes in consumer behaviour.

## 1. Environmental monitoring

41. In general, environmental monitoring data refer to the data on the state of the environment (environmental quality) and the changes in the stock and flow of natural resources (resource quantity). Issued annually, they may cover air, freshwater, land, forest, wild life, raw materials (metals and minerals), energy, manufacturing and agricultural sectors. They serve to inform the nation of the changes and trends in the quality of their national environment and ecosystems and resource flows. In most developed countries, data on waste generation and expenditure on pollution control are also available. Often included are relevant economic and social data, such as population, urbanization, and GDP growth. Because of their early head start in this effort, the OECD countries have generally comprehensive data on these environmental and related variables. OECD publications like State of the Environment in OECD Member Countries and Environmental Data Compendium provide data and information on new developments in the national environment. In the United Nations system, the Environmental Data Report, coordinated and published by UNEP, is a most comprehensive regular publication on the monitoring and assessment of the state and trends of the global environment. Comprehensive national monitoring data are not yet available in many developing countries, although some sectoral data based on survey results have been published and made use of in policy discussion and formulation.

42. Monitoring data, especially those on emissions and wastes, are of particular relevance to changing production and consumption patterns, since they generally identify the sources of emissions and wastes. For instance, emission data not only include amounts of specific pollutants but also relate them to sources (stationary, which include power stations; mobile, which include motor vehicles; and industrial processes, basically manufacturing). Data on waste generated are given by sources and sectors, together with the amounts. Using the integrated life-cycle approach, one may design and formulate emission/waste reduction policies in light of their sources and stages.

43. In recent years, environmental monitoring has evolved to extend to environmental impact assessment (EIA). 27/ In some countries, large-scale development projects are subjected to comprehensive EIA studies before clearance is obtained. Increasingly, projects financed or supported by international funding and development agencies are going through the same screening procedure. Given the weight of extracting/mining industries and the manufacturing sector in industrial waste generation, some countries are also developing and applying environmental audits to monitor the behaviour of corporations and businesses in the protection of the environment and ecosystems. These are divided into three types: compliance audits aimed at reviewing permits and environmental management system; transaction audits conducted to determine environmental liabilities; and production process audits used to evaluate the technical structure of a plant and to recommend operational changes to improve the efficiency of using natural resource inputs, reduce waste and prevent pollution. 28/ Increasingly, businesses are applying environmental audits on a voluntary basis, reflecting progress in environmental awareness and its impact on economic activities.

## 2. Environmental resource accounting

44. Environmental resource accounting, often referred to as "green accounting", stems from the failure of conventional systems of national accounts to take into consideration the services rendered by environmental resources (such as the sink function of forests), their depletion and the damages to the national ecosystems. Efforts at resource accounting also reflect the need to give economic or monetary value to resources and ecosystems that have until recently been regarded as free goods (such as the free use of water and land for the release of toxic chemicals and waste disposal). It has been argued that this underpricing of resources has contributed to the wasteful and inefficient production and consumption of resources, and there is a need to move towards full-cost pricing of such resources through economic instruments (like taxation and imposition of user charges). In this sense, environmental resource accounting is a necessary precondition for full-cost resource pricing. 29/

45. There are a number of techniques of economic valuation of environmental and natural resources. Among the ones that have received most attention are the Hedonic Price Methods (HPM), which estimate an implicit price for environmental attributes by looking at real markets in which those attributes are effectively traded; Travel Cost Method (TCM), which uses the information on the money and time that consumers spend on enjoying a recreational site as a proxy for the demand for that site; and the Contingent Valuation Method (CVM), which derives the value of environmental resources by considering the willingness of consumers to pay to guarantee an improvement in the quality of the environment or willingness to accept compensation to forgo this improvement. 30/ While the development of such methods has helped fill in the knowledge gap in full valuation of environmental and natural resources, there remain considerable difficulties in their application for policy purposes. Currently, UNEP is implementing a work programme on resource valuation. Under preparation are a manual and training materials on the use of the above valuation methods, with particular emphasis on valuing services and damages incurred through the use of

environmental assets, including transboundary externalities and non-market services.

46. Despite the technical difficulties and methodological imperfections, a number of countries have tried to incorporate the stocks and flows of natural and environmental resources as well as environmental damages into national accounts to achieve a more realistic and balanced measure of real sustained growth and welfare (the Netherlands, Norway, the United States). At the international level, the Statistical Division of the United Nations Secretariat, in collaboration with UNEP and UNDP, is currently assisting three developing countries (Indonesia, Colombia and Ghana) in the application of techniques of integrated environmental and economic accounting. The Division is also coordinating an attempt to reach international agreement on national reporting systems that will integrate environmental statistics with the established system for economic and social accounting. It and the collaborating agencies stress the need to develop national databases that integrate environmental and socioeconomic data as a prerequisite for integrating accounting and policy analysis. 31/

### 3. Sustainable development indicators

47. Parallel to the activities in the collection of monitoring data and resource accounting is the compilation of sustainable development indicators, guided and coordinated by the Commission itself at the intergovernmental level. At the national level, an increasing number of Governments have already compiled basic elements to be incorporated into an agreed framework for internationally comparable sustainable development indicators. Some Governments also took the step of incorporating these elements in their national reports to the Commission at its second session. It is now generally agreed that the indicators should fill the gap in environmental information and reflect the interactions and interrelationships between environmental and social economic dynamics. They should be used to measure progress in sustainable development and identify policy issues and shortcomings. See the report of the Secretary-General on information for decision-making and Earth Watch for a detailed discussion of work in this area. 32/

### 4. Consumer information and behavioural changes

48. Traditionally, consumer information has been compiled for the purpose of consumer protection. In 1985, the General Assembly adopted Guidelines for Consumer Protection, 33/ which have since been widely used by Governments to develop legislation and policies in areas encompassing safety, standards, education and information programmes and measures relating to food, water, chemicals, product quality control, international labelling and cooperative mechanisms. In spite of these efforts, the need for changing the present unsustainable consumption patterns has spawned new information requirements. Recent experiences at promoting sustainable consumption in a number of developed countries suggest that despite growing environmental awareness, the majority of consumers still have little knowledge of the environmental impact of their consumption habits and lifestyles. While an ever large number of consumers

express their readiness to purchase environmentally friendly products, even paying a "green" premium, they may be unable to tell which producers make environmentally friendly products (with, for example, no environmentally hazardous substances) or where to find them. They also have limited knowledge of the life-cycle effects of products (these should include the environmental impact arising from the extraction and processing of raw materials, manufacturing of products and their disposal at the end of their envisaged life). 34/

49. In response to this lacuna, an increasing number of Governments, in collaboration with manufacturers, standard and certification organizations, and consumer groups, have initiated eco-labeling schemes, covering a growing range of consumer products. In the Netherlands, the retail sector is playing an important role in helping disseminate product information and assisting consumers in purchase choices. There is enough evidence to conclude that there is a core group of consumers in the society committed to adopting new consumption values and lifestyles. If this group is provided with the necessary information, these consumers will take the lead in setting in motion sustainable consumption patterns and encourage broader participation from society at large. The recent emergence of eco-labeling schemes in developed countries, although aimed at increasing consumer knowledge and changing consumer behaviour, has caused a number of concerns in developing countries over production, trade and environmental protection. A key feature shared by most eco-labeling schemes is the requirement concerning the producer's use of raw materials and production processes because of the related environmental effects. Given the technological gap as well as different geographical and ecological conditions, producers in developing countries may often find these criteria difficult to comply with, in terms of both technological capacity and adverse effects on cost competitiveness. Also, in the absence of full consultation, the process of criteria-setting is such that producers in developing countries may not have the opportunity to participate, and the criteria finally adopted may correspond to conditions in developed countries only. Recent work carried out by UNCTAD and OECD suggests that increased transparency, the use of scientific data as a basis for developing the criteria, more attention to the specific environmental conditions of producer countries, transfer of environmentally sound technology, accurate and systematic life-cycle analysis, and participation of foreign producers in the development of the schemes are among the measures that could be employed to improve eco-labeling. For detailed discussions on the trade implications of eco-labeling schemes, see "Report on the Workshop on Eco-labelling and International Trade", prepared by UNCTAD. 35/

### E. Design and implementation of measures aimed at sustainable consumption and production patterns

50. Analytical studies initiated by OECD as well as country experiences have revealed that Governments normally utilize several types of instruments to bring about changes in production and consumption patterns. These include legislation and standards (command-and-control measures), fiscal and pricing policies (economic instruments), education and awareness campaigns (social instruments), public expenditures on complementary facilities and infrastructure, and

technology policies. Often, these measures are pursued together to achieve enhanced effectiveness.

### 1. Command-and-control measures

51. Most countries responded to environmental degradation by first enacting new legislation, generally coupled with new technical standards and practices. In response to specific episodes of environmental degradation and also reflecting the early piecemeal approach, the enactment of these new laws often aimed at reducing specific pollutants or environmental damages, such as the Federal Water Pollution Control Act of 1948 and the Air Pollution Control Act of 1955 (United States). With growing public awareness and gains in knowledge of the scope and extent of environmental degradation, the single-solution approach gradually gave way to more comprehensive law-making endeavours to achieve overall improvements in environmental management. In many instances, these efforts are embodied in a comprehensive national environment policy act, covering resources protection, pollution prevention and control. Some countries have also passed laws prohibiting the use of selected inputs in certain categories of products, such as pesticide or toxic chemicals. It is now recognized that the application of these command-and-control measures over the past few decades has succeeded in halting some forms of environmental degradation, protecting species and changing producer behaviour. Not surprisingly, these command-and-control measures are generally targeted at producers in industry who are engaged in the upstream activities of extraction and processing of raw materials and manufacturing of intermediate and end products.

52. In many cases, national legislative actions are related to efforts at the international level, embodied in international treaties, conventions and agreements. These may apply to countries of specific economic groupings or geographical regions. In the past 20 years some 90 international legal instruments have been registered, a dramatic increase over the preceding period. These instruments cover natural resources, species, water, biodiversity, pollution prevention and hazardous wastes etc. The increase in the number of instruments and the areas covered attest to the transboundary nature of environmental problems, its attendant global dimensions and the need for international cooperation and coordination.

### 2. Social instruments: education and public awareness campaigns

53. The UNCED process provided strong momentum for the use of social instruments. These include information for consumers and community actions. The thrust of social instruments lies in the spontaneity, initiative, conviction and enthusiasm that are often associated with grass-roots movements. In some countries, Governments play an active role in supporting such movements by providing technical or financial support and by responding to campaign initiatives in actual deeds. To the extent that such movements or campaigns may help persuade producers and consumers alike to change course by reducing environmentally degrading practices and habits, they deserve to be given broad support by all segments of the society.

54. Governments themselves may often use social instruments. They may initiate their own action in areas like education and information to promote sustainable consumption values and lifestyles. They may provide or support facilities to catalyze and sustain consumers' behavioural changes - for example, by upgrading public transport, improving waste collection and recycling services, and establishing infrastructure for sustainable consumption. In countries like Norway and the Netherlands, among others, Governments also conduct direct negotiations with major stakeholders so that voluntary agreements could be concluded between parties concerned to meet specific environmental targets.

55. Education, both formal and informal, has a unique role to play in changing consumer attitudes and behaviour. Introducing formal environmental curricula into national education systems will go a long way towards enhancing environmental literacy and skills. For instance, children who are taught the importance of protecting the environment and the planet's ecosystems will grow up to become tomorrow's environmentally conscious managers, workers and environmentally friendly consumers. However, environmental education and awareness campaigns should go beyond the general public by, for example, developing targeted programmes of environmental education and training for corporate managers, production managers, engineers, designers, and the work force.

### 3. Economic instruments

#### Rationale of economic instruments

56. Many environmental problems arise because of externalities which arise from production and consumption in market economies. For instance, a power plant utilizes inputs and labour to generate electricity and in the process emits pollutants that cause air pollution, despite the fact that the plant's intended output is electricity rather than air pollutants. So long as the ecosystems still have the capacity to absorb the pollutants, such negative externalities have been ignored. This service of providing a "sink" has been rendered outside the market - that is, without any price attached to it. When it becomes clear that accumulated environmental effect caused by resource consumption and production have exceeded the absorption capacity of the ecosystems, externalities have to be internalized by polluters, hence the "polluter pays" principle. While such costs can be internalized by command-and-control measures and economic instruments, the latter are often far more efficient.

57. Inappropriate governmental policy may also give rise to undervaluation of resources and, hence, their overuse. In most cases, such policy failures not only encourage environmental degradation but also lead to economic inefficiencies. Among the main policy failures so far identified are low user charges on publicly owned natural resources (which encourage excessive logging or mining operations because of super-normal profits), and perverse subsidies (which lead to excessive levels of production and/or input use). 36/

58. Ideally, the application of an economic instrument should result in the equivalent of an optimal "Pigouvian tax" (tax that equates the marginal social benefit of reducing the externality to the marginal cost of achieving the

reduction). In practice, determining the optimal level of such taxes is impossible because of difficulties encountered in valuation and cost calculations. Experiences suggest, none the less, that although the amounts of taxes or charges may vary from country to country, they are often adjusted over time to move society closer to a pattern of production and consumption deemed better to reflect the full range of the costs, including the costs to the society and to future generations.

59. An important feature of economic instruments lies in their incentive effects on behavioural changes, in both manufacturers and consumers. For instance, emission charges create powerful incentives to reduce environmental degradation, since reductions in charges are commensurate with reductions in pollutants. This cost factor (as is the case with tradable permits) also stimulates manufacturers to search for cleaner technologies, thereby contributing to long-run changes in production processes. Indeed, the incentives effects on the behavioural changes of manufactures in face of the internalization of externalities have been generally established as positive. 37/ As for consumers, deposit/refund systems are clearly aimed at changing their consumption habits. By placing a refundable surcharge at sale points on those products that may have negative environmental effects if abused in their disposal, deposit refunds allow the consumer to either return the product (or its container) and get paid back the surcharge for avoiding environmental degradation, or forfeit the refund. As is seen below, the experience of those countries applying deposit/refund schemes indicate that there is a high percentage of return.

60. Basically, economic instruments include the following main types: charges/taxes on emissions (subdivided into air, noise, soil, waste, and water); charges/taxes on products; deposit/refund systems; tradable permits. As the discussion on the need for internalization of externalities above suggests, most of these instruments are intended to correct for market failures. However, there is a considerable number of cases where charges are related to services rendered, especially in the case of the collection and disposal of municipal waste. In an increasing number of developing countries and economies in transition, economic instruments are also being used to generate resources to fund national environmental protection programmes. 38/

Economic instruments in action

61. So far, economic instruments have been applied mainly in industrialized countries, although an increasing number of developing countries have started adopting them. For instance, charges on emissions are levied formally in OECD countries, mostly on sources of pollution, either in the form of a flat rate (as in the case of municipal waste) or in proportion to the actual amount of emissions. Experiences in Sweden, Canada and the United States have provided clear evidence of the effectiveness of emissions charges, as embodied in actual emissions reductions. The results in some other countries, such as in Japan, although considered positive, are less clear-cut, since actual reductions in emissions may have been due to other control efforts.

62. Product charges are levied either on products themselves or on product characteristics, such as carbon or sulphur content. A typical example is tax on

leaded car petrol. Records in most industrialized countries that have adopted a leaded petrol tax suggest that partly as a result of the differentiated taxation on leaded and unleaded petrol, the market share of unleaded petrol has increased, in some countries by a large margin (Germany, Finland, Netherlands and Switzerland). In the United States, total annual emissions of lead nation-wide declined from 203.8 million tons in 1970 to 8.1 million tons in 1987, mainly due to the gradual phasing out of leaded petrol. 39/ In Thailand, in 1991, a tax on leaded petrol was introduced to finance a subsidy for unleaded petrol. 40/ In some countries, products charges are also levied on fertilizers and pesticides, with the revenue thus generated channelled to environmental expenditure or general budgets (Austria, Finland, Norway, Sweden, United States). Consumption levels of nitrogen and phosphorus are estimated to have decreased in those countries. 41/

63. Likewise, deposit refunds have also achieved remarkable results on average, with return rates in some countries as high as 90-100 per cent (Norway, Sweden, Finland and the Netherlands). Similar results have been achieved with deposit refunds on beer and soft drinks, although return percentages for wine and liquor vary between 40-80 per cent. Since they generally operate at sale points through the retail channel, the deposit/refund systems have low administrative costs. Because of this advantage, some developing countries have already introduced them as an instrument for internalization of consumer-originated externalities. Since 1988, the Republic of Korea has operated a deposit/refund system on food containers, tires, batteries, lubricants, pesticide containers, and plastics. 42/

64. Of the main types of economic instruments, tradable permits is the only one that is directly related to the creation of a market where emissions permits could be traded between interested sellers and buyers. When regulatory authorities have determined the overall level of emissions permitted within a given area, permits equal to the total permissible level of emissions are distributed among polluting firms in that area. Firms that succeed in meeting their emissions obligations below their allotted levels may sell or lease their credits to plants of the same firm or other firms. 43/ Although empirical experiences of tradable permits are limited to a few countries, the records in the one country that has long practised tradable permits on a large scale - the United States - show that tradable permits are an effective means of air and water pollution control. Added to the effectiveness of this instrument is its cost advantage, since in economic terms, permits or allowance trading also assists in lowering costs at the firm level. 44/ An additional advantage is that tradable permits could encourage more technological innovations, since firms have an incentive to search for the best technologies and sell on the market whatever emissions reduction credits thus realized. The successful experiences in tradable permits also point to the importance of the simultaneous use of other instruments. In the case of tradable permits, command-and-control measures are also necessary, since regulatory authorities have to predefine the emissions ceilings.

65. The growing use of economic instruments and an assessment of obstacles to overcome for further progress, is examined in the report of the Secretary-General on financial resources and mechanisms for sustainable development. 38/

Table 7. Instruments for changing consumption and production patterns

| Type of instrument | Functions | Advantages | Disadvantages |
|---|---|---|---|
| Command and control | | | |
| Legislation | To provide a legal framework for environmental protection<br><br>To serve as guidelines for policy formulation at different levels | General compliance<br><br>Higher certainty of agent's response and behaviour | Enforcement costs can be high<br><br>Lack of flexibility |
| Standards | To set technical standards, including ambient and effluent standards | See above | The cost of compliance may be high for some industries in some countries |
| Quotas | To establish ceilings on pollutants, such as emission quotas, and on resource quotas like fishing/logging quotas | When traded among companies and market agents, have the cost advantage and flexibility of tradable permits | Local ambient quality could be affected |
| Economic instruments | | | |
| Establishing property rights and responsibilities | To provide incentives for environment-friendly behaviour | Combine development with environment protection | Difficult to implement in some sectors, such as land titles |
| Charges | See above<br><br>By charging the cost for resource use, generate resources for cleaning-up and protection programmes | In addition to revenue creation, charges such as effluent charges, user charges and product charges help reduce material intensity and minimize waste | Universal charges may limit the growth potential and survival of small businesses |
| Deposit and refund | To provide incentives for recycling and reuse | Minimizing waste and reducing resource use | Lower deposits may not attain desired results |
| Differentiating taxation | To provide, mainly through price signals, incentives for consuming environment-friendly products and services<br><br>To generate resources for environmental protection programmes | Tackles market failures through price adjustments so as to compensate for externalities<br><br>Creates markets for environment-friendly products; stimulates research and innovation in environment-improving technology | In some cases administrative costs associated with tax collection and enforcement might be high |

| Type of instrument | Functions | Advantages | Disadvantages |
|---|---|---|---|
| Subsidies | To subsidize research and development in new technology | Helps alleviate constraints on private research and development budget allocations | May run counter to polluter-pays principle |
| Social instruments | To raise public awareness of environmental issues and foster changes in attitudes and behaviour | Helps mobilize political will and group pressure on producers as well as consumers | Sometimes may become difficult to sustain |
| | To introduce environmental education into education systems | Enhances knowledge and skills in sustainable production/consumption | |

Source: Department for Policy Coordination and Sustainable Development, United Nations Secretariat.

## 4. Technology innovation and transfer

66. The application of command-and-control measures and of the social and economic instruments outlined above is expected to speed up the development and diffusion of technologies that pollute less and are more efficient in the use of inputs and raw materials. Some measures are, of course, aimed directly at producers, but even those aimed at consumers will have an effect on producers by altering conditions in the markets for their products.

67. While technological solutions to environmental problems are unlikely to be a panacea, improving production processes and product composition can go a long way in reducing and minimizing wastes and pollutants and enhancing efficiency of resource use. The past two decades have witnessed significant headway in the innovation and adoption of environmentally sound technologies. The initial results (mainly end-of-the-pipe technologies retro-fitted to existing plants) reflect the combined effect of public pressure, law-making efforts and subsequent introduction of economic instruments. Air pollution control technologies for fossil fuel consumption by electric utilities and automobiles are good examples of how new ways of production could reduce environmental damages. Similar progress has been made in hazardous-waste control and remediation technologies.

68. The end-of-pipe technologies, useful as they have been in limiting and reducing environmental degradation, have yielded their own pollutants or waste, albeit in lower amounts or of different types. They are often too expensive for small producers to adopt. There is growing recognition that technological innovation should evolve in the direction of better product designs, increased use of secondary materials and reductions in energy and material consumption.

69. An important subject in this area is technological transfer. The need for sharing technological progress arises from both equity concerns and the transboundary nature of global environmental problems, such as global warming and ozone depletion whose solutions call for international cooperation and

collaboration. But there is also a longer-run consideration - the ever-widening technological gap between developed and developing countries. With the enactment of new environmental laws and the consequent adoption of new standards in industrialized countries, developing countries are faced with increasing difficulties in maintaining and enlarging access to global markets. In the short-to-medium terms, technological cooperation, including transfer of clean and other environmentally sound technologies, hold the key to improving technological capacities of many developing economies. The developed countries, which account for 90 per cent of the world market in environmental technologies and products, bear special responsibilities in this respect. Transnational corporations in these countries, both as the principal innovator and repository of environmentally sound technologies, have a unique role to play. 45/

## II. REVIEW OF PROGRESS IN IMPLEMENTING THE RECOMMENDATIONS ON CONSUMPTION AND PRODUCTION PATTERNS MADE BY THE COMMISSION AT ITS SECOND SESSION

70. The growing awareness of the long-run implications of changing the prevailing consumption and production patterns has started to generate more momentum for concrete steps by Governments, the business community and major groups. Many of these steps were initiated prior to the consideration of the consumption issue by UNCED. Some others were undertaken in response to the Commission's debate and decision on the subject. Also, many ongoing efforts or planned events by international organizations and representative bodies of major groups have taken into consideration the results of the deliberations by the Commission on reducing unsustainable production and consumption patterns. This chapter provides a short review of the recent experiences of a selected number of countries and organizations in changing unsustainable production and consumption patterns, as provided in their reports to the Commission at its second session.

### A. Country experiences

#### 1. Developed countries

71. Among industrialized countries Norway, along with some others, has taken a strong position on reducing unsustainable consumption patterns. Since 1991, the country has levied a consumption tax on $CO_2$ emissions. This measure helped reduce the $CO_2$ emissions in Norway by about 5 per cent between 1990 and 1992.

72. In an attempt to involve the business community, the Norwegian Ministry of Environment has initiated a Green Management programme to combine the knowledge of the market and environment so that businesses will avoid environmentally damaging practices and take advantage of the potentials in the "green market". The programme has espoused the life-cycle approach to product management and has emphasized the use of market mechanisms. At present, there are pilot projects in the following sectors - grocery, advertising, construction, and telecommunications. Since 1991, a national consumer-awareness campaign has also been in place, focusing on waste minimization and recycling. Survey results

indicate that already 10 per cent of the population say that they have reduced household waste because of the campaign.

73. In changing unsustainable consumption, Finland has adopted a mix of policy instruments. The Government started with legislation, administrative regulations and permit applications, and recently followed up on these command-and-control actions with economic instruments, including taxes on emissions, product charges (e.g. on fertilizers in proportion to nitrogen and phosphorous concentrations), deposit/refund systems and differentiated taxation (e.g., a discount of US$ 800 from taxation value for cars with catalytic converters).

74. As part of its policy measures on sustainable agriculture, the Ministry of Agriculture and Forestry of Finland has published a guide on good cultivation methods, including those on water protection. Recently, several proposals have been launched to integrate the goals of agricultural production and environmental protection, encompassing decreasing application of chemical inputs, promotion of landscape management and reorganization of subsidies in accordance with environmental criteria.

75. In the United States, a new important initiative launched in 1993 on government acquisition is now being implemented. An Executive Order requires the Environmental Protection Agency to issue guidelines to be followed by federal government agencies in making determinations for the preference and purchase of environmentally preferable products. Since the federal Government is the nation's single largest consumer, purchasing over $200 billion worth of goods and services per year, it is envisaged that the implementation of the Executive Order will harness the federal government's purchasing power to promote markets of products and services that result in less risk to human and ecological health. The federal Government was implementing a number of acquisition measures, including accelerating its purchase of alternative-fuel vehicles, promoting the purchase of recycled and recovered products, and increasing the purchase of energy-efficient products.

### 2. Developing countries and economies in transition

76. Despite the difficulties arising from limited administrative and other resources, developing countries and economies in transition have adopted measures to change some consumption and production patterns having adverse effects on the environment. India, for example, has recently taken steps to make environmental auditing mandatory as part of the Government's effort to control and reduce environmental risks. Environmental impact assessment has also been made mandatory in specified projects before environmental clearance is obtained. The use of clean technologies is being encouraged through the use of fiscal instruments. On the consumption side, the Government issues awards to consumer products that are environment friendly and that use safer chemicals and technologies.

77. In Malaysia, the Government has recently deployed a mix of instruments to promote sustainable production and consumption patterns. These include price reductions for unleaded fuel, exemption of duty on catalytic converters and

higher import duty on luxury items like large capacity motorcycles. To encourage industries to adopt cleaner manufacturing technology, the Government has provided fiscal incentives, including granting pioneer status to companies that undertake the processing of agricultural and chemical waste. Equipment and materials used for pollution control are exempt from import duty, sales tax and excise duty. Meanwhile, use of these economic instruments has been complemented by public awareness campaigns, launched by governmental agencies and non-governmental organizations. Programmes aimed at schools have proven to be particularly successful.

78. In Estonia, the Government has tried to integrate policy measures aimed at integrating production and consumption patterns into the overall restructuring process. Among other measures, the Government has imposed charges on waste deposition as part of the ongoing effort to minimize waste and encourage innovation in production techniques and methods.

## B. Experiences of major groups

79. As is the case with other programme activities of Agenda 21, major groups have either initiated or actively participated in projects and campaigns targeted at unsustainable consumption and production patterns. These groups normally carry out activities that can bring into full play their special expertise and other strengths, including organizational advantages.

80. There exists a wide variety of activities initiated by major groups, but all share a common feature - their advocacy role. By using mass media and other means of communication to disseminate values of sustainable consumption, they address themselves not only to their respective constituencies but also to the public at large. In promoting such values, they also often fulfil a monitoring function, drawing public attention to acts of environmental degradation.

81. For instance, the International Organization of Consumers Unions, along with many others, has for years played such an advocacy-cum-monitoring role. In addition to its efforts at protecting and promoting consumer interests, the organization has recently embarked on a new undertaking - promoting sustainable consumption worldwide. Through conferences, workshops, seminars and publications, it is also targeting its effort at policy makers, pushing for sustainable consumption beyond the year 2000.

82. Many non-governmental organizations have focused their campaigns on specific sectors such as forestry, biodiversity and food consumption. For example, some Dutch non-governmental organizations have worked at the grass-roots level to mobilize support for organic farming by encouraging the purchase of food products produced in an ecologically sound manner. These include meat, vegetables, fruit and tropical beverages. In another case, a couple of local governments and governmental agencies have promised to review their consumption of tropical wood as a result of campaign activities by two organizations.

83. One United States-based non-governmental organization, the Global Action Plan (GAP), seeks to change consumption patterns by working directly with households. Their household-by-household campaign focuses on what can be done

at the household level to reduce adverse environmental impacts in five areas: reducing waste and its toxicity; improving water efficiency; improving household energy efficiency; improving transportation efficiency; and developing an "eco-wise" approach to consumption. GAP is presently operating in 10 countries and has thousands of households participating in its programme. 46/ The participating households in the United States reported that on average they sent 39 per cent less garbage to landfills, used 26 per cent less water, cut 18 per cent of their $CO_2$ emissions, used 16 per cent less fuel for transportation and achieved an average savings of $403. Right now GAP is working with five pilot cities to refine its strategies for mobilizing community-wide participation. In 1995, GAP will begin replicating en masse the community-based approach, complemented by a national media campaign that promotes the new lifestyle ethic. This effort in turn will be followed by a five-year national campaign with the objective of engaging by the year 2000 a critical mass of Americans - 2 million households in 500 communities - in leading environmentally sustainable lifestyles.

## C. Recent developments and experiences in international cooperation

84. As pointed out at the beginning of the present report, the success in changing consumption and production patterns may well determine whether sustainable development can be put into operation and practised. Given its importance and the effect of demand changes on production and a host of other interrelated factors, the subject has been given high attention in other intergovernmental forums and processes. International organizations, both inside and outside the United Nations family, have - to varying degrees - contributed to advancing policy debate and analysis on this subject.

### 1. Intergovernmental process

85. At the International Conference on Population and Development (Cairo, September 1994), the issue of consumption and production patterns received wide attention. Delegates addressed the interrelationships between demographic factors, poverty, excessive consumption and wasteful production patterns and environmental degradation. The dichotomy between poverty and lack of access to resources, on the one hand, and wasteful and extravagant consumption on the other was highlighted. Many pointed out that the continuation of such a dichotomy could inhibit efforts at sustainable development.

86. The Conference called on Governments to integrate demographic factors into environmental impact assessments and other planning and decision-making processes aimed at sustainable development. Specifically, it was recommended that Governments should modify unsustainable consumption and production patterns through appropriate economic, legislative and administrative measures with a view to fostering sustainable resource use and preventing environmental degradation. Governments were also recommended to utilize demographic data to promote sustainable resource management, especially of ecologically fragile systems, and to undertake research on the linkages between population,

consumption and production, the environment and natural resources, and human health as a guide to effective sustainable development policies.

87. As a follow-up to the 1994 Oslo Symposium on Sustainable Consumption, the Government of Norway hosted the Oslo Roundtable Conference on Sustainable Production and Consumption (6-10 February 1995), with a ministerial session held from 8 to 10 February 1995. The goal of the Conference was to prepare elements for an international work programme and promote progress in sustainable production and consumption patterns by providing a menu of practical recommendations for citizens, non-governmental organizations, business, Governments and international organizations. The report of the Conference proposed a range of specific actions to encourage greater efficiency and equity in the use of energy, land, water, and other resources, and to minimize and avoid pollution and waste. 47/ Particular emphasis was placed on the following:

(a) Building partnerships for sustainable consumption between different sectors of society and reinforcing the values that support sustainable consumption;

(b) Establishing a policy framework for sustainable consumption by moving towards environmentally sound pricing;

(c) Extending producer responsibility for the environmental impacts of goods and services;

(d) Setting a government example in sustainable consumption through environmentally sound public procurement and administration;

(e) Empowering individuals and households to adopt more sustainable consumption patterns.

88. As is evident from the above elements, the Conference focused on an end-use approach to achieving sustainable consumption, which it was felt could have several advantages, such as balancing the traditional supply-side focus of environmental management by complementing it with the demand-side approach; ensuring that environmental problems are not shifted from one part of the life cycle to another; and linking production to consumption. More importantly, such an approach also allows Governments, businesses and consumers to take their share of responsibility. Governments have to provide the framework of incentives, infrastructure, regulation and leadership that will enable other actors to take responsibility for their part of the chain from production to consumption and final disposal. The business sector has a major responsibility for managing the life-cycle environmental impacts of the goods and services they supply. Furthermore, public agencies and business consume large amounts of energy and natural resources and generate corresponding levels of pollution and waste. Consumer decisions are also strongly influenced by - and in turn influence - advertising and other economic and structural mechanisms controlled by business and government. While underlining the growing desire among these actors to move towards sustainable consumption patterns, the documents also warned that getting the world onto a sustainable consumption trajectory would take decades. Current capital stocks of physical infrastructure in housing, energy, transport and waste management may lock societies into unsustainable

patterns of consumption and production over which individual consumers have little influence. Furthermore, cultural habits and value systems may also impede rapid progress in achieving sustainable consumption patterns.

### 2. Organizations within the United Nations system

89. In response to the Commission's consideration of unsustainable consumption and production patterns, organizations in the United Nations system have undertaken various activities in support of changing consumption and production patterns. These range from sector-specific activities to cross-cutting programmes. For instance, ESCAP, with its cross-sectoral emphasis, is undertaking capacity-building activities in the areas of waste audit and natural resource conservation to promote sustainable production and consumption patterns. Awareness raising through the Asia/Pacific Forum of Environmental Journalists is also assisting in the process.

90. UNESCO is currently addressing the question of changing consumption primarily through its work in the field of education (both formal and non-formal) and public awareness. A major initiative in this regard is the interdisciplinary and inter-agency project on environment and population education and information for human development, launched by UNESCO in the 1994-1995 biennium as a follow-up to the Rio and Cairo Conferences and in anticipation of the World Summit for Social Development. The project is designed to deal with the interwoven issues of population, environment and human development in an integrated manner, with emphasis on context-specific and problem-solving approaches and action.

91. Given its sectoral mandate, the major programme initiative of the United Nations Centre for Human Settlements (HABITAT) focuses on human settlement. The Settlements Infrastructure and Environment Programme, launched by HABITAT as a direct response to Agenda 21, identified as its immediate objective the development of an integrated human settlements approach to the planning, delivery, operation and maintenance of infrastructure and services that would lead to more sustainable production and consumption patterns in water, waste management, energy and transportation. The Programme addresses the waste minimization issue through linking waste-recycling activities to income generation for the urban poor.

92. Another important initiative by HABITAT is the Sustainable Cities Programme, based on concepts and approaches closely related to sustainable consumption and production patterns. The programme is founded on a participatory process at the city level, involving all relevant actors and stakeholders. This process would ensure that effective demand for services are correctly identified and service delivery and policies for land and other resource utilization would be responsive to effective demand.

93. UNCTAD has carried out activities on several topics of direct relevance to changing consumption patterns. These include its work on expanding the utilization, production and trade of environmentally friendly products and on internalizing environmental costs and resource values aimed at full resource pricing. Its work on the former aims to assist developing countries in

increasing export earnings by expanding the sustainable production and export of products that are environmentally preferable from the point of view of both producing and consuming countries.

94. As regards the internalization of environmental externalities related to primary commodities, the fundamental issue of changing consumption and production patterns is on the agenda of the fourth session of the UNCTAD Standing Committee on Commodities which is scheduled to meet from 30 October to 4 November 1995. The discussion will focus on the manner in which prices of natural commodities and their synthetic competitors could reflect environmental costs, taking into account policies relating to the use and management of natural resources and sustainable development. Analytical and empirical work based on case studies undertaken in cooperation with UNEP by UNCTAD centres on the main distortions in price-formation mechanisms, the instruments of internalization and their combination and avenues for a cooperative multilateral approach to internalization.

95. UNCTAD, UNEP, the International Organization for Standardization, and OECD are all undertaking relevant work on eco-labeling issues. These are discussed in the Secretary-General's report on trade, environment and sustainable development (E/CN.17/1995/12).

96. UNDP has recently taken a few initiatives that will have an impact on consumption patterns at the local level. For instance, it has designed an energy strategy for application in the energy programmes funded through UNDP. This strategy will build on four options: more efficient use of energy and energy-intensive material; increased use of renewable sources of energy; more efficient production and use of fossil fuels; and fuel substitution, for high-carbon-based fuels to low-carbon, or no-carbon based fuels.

97. UNDP has started, in collaboration with the World Business Council for Sustainable Development, a public/private partnership initiative aimed at lowering natural resource inputs and minimizing waste. Six pilot projects are currently under way, each addressing a different sector, different resource consumption, and different technological solutions.

98. UNDP's programme to promote sustainable agriculture advocates changes in resource inputs at the farm level. Through a low external input approach to sustainable agriculture, efforts are made to conserve water, topsoil, and limit chemical inputs into the food chain. This process will minimize harmful waste and pollution from the agricultural sector.

99. The National Forest Capacity Programme advocates the development of capacity to manage forests in a sustainable manner. This includes changing present consumption patterns through lower consumption of raw logs, through a system of higher royalties and through addressing needs for changes in concessionary rights. The programme also aims at local capacity-building for more efficient harvesting of timber.

100. FAO is currently engaged in programme activities in several areas that contribute to changing consumption and production patterns. It is actively involved in the promotion of alternatives to fossil fuels, which include biogas

generation, solar cooling and residue-based fuels. Through technical cooperation programmes and projects funded by UNDP, FAO has promoted the use of straw in beef-fattening in China, thereby reducing atmospheric pollution and increasing food security through the production of quality protein.

101. The work of the FAO Forestry Department includes activities relevant to consumption patterns of forest products. FAO is continuing its effort to promote fuelwood-efficient stoves for domestic use in developing countries. It is also promoting biological methods to control forest pests in an attempt to reduce the use of chemicals for such a purpose. In this regard, FAO is a pioneer in supporting the development and implementation of integrated pest management in food and agricultural production. At present, several national, regional and interregional programmes are under way to facilitate the wider dissemination of such management.

102. The United Nations University is carrying out a zero-emissions research initiative. The programme examines options for the redesign of production processes in participating companies, such that the waste by-products of some industries can be used as inputs by other industries.

103. UNEP is carrying out a number of programme initiatives aimed at the adoption of cleaner production world wide and at sustainable consumption of natural resources. The Cleaner Production Programme of the UNEP/PAC's Industry and Environment Programme Activity Centre helps Governments and industry develop the policies necessary for cleaner production and facilitates the transfer of cleaner production technologies. The UNEP Working Group on Sustainable Product Development was recently established. It will encourage and support the development of a world-wide network of centres to promote research and development of sustainable products. Jointly with UNIDO, the UNEP activity centre is currently supporting capacity-building in developing countries through the establishment of national cleaner production centres. These centres, closely associated with industry, will be responsible for raising awareness, collecting and disseminating information, providing technical assistance and conducting demonstration projects.

104. In the area of environmental and natural resource accounting, UNEP, in cooperation with the Statistical Division of the United Nations Secretariat and ECE, convened a workshop in March 1994 on environmental and natural resource accounting, with particular reference to countries in transition to market economies. The workshop focused on the implementation of the revised system of national accounts together with the development of environmental satellite accounts. It provided recommendations on theoretical and methodological advances and modalities of introducing environmental and resource accounting in countries in transition to market economies. Similar activities have also been implemented or planned for other developing countries, including a workshop for Francophone African countries, scheduled for October 1995. In the area of projections and perspective studies, UNEP decided to launch a Global Environment Outlook in early 1995.

105. UNEP's work on the valuation of environmental and natural resources and sustainable development included a consultative expert group meeting on the valuation of environmental and natural resources, held from 8 to 10 August 1994.

The meeting reviewed existing valuation methodologies, identified gaps and proposed practical methodologies, with particular focus on developing countries and economies in transition. UNEP's work on the use of economic instruments for environmental management was advanced by a consultative expert group meeting held from 10 to 12 August 1994. That meeting reviewed the use and practical application of economic instruments for environmental management and sustainable development, with special reference to developing countries and economies in transition. Particular emphasis was given to the application of these instruments in sectors like terrestrial ecosystems, including soils, wildlife, biodiversity, freshwater resources, oceans and marine ecosystems and toxic chemicals and hazardous wastes. In collaboration with other organizations, UNEP also launched a number of projects on the application of economic instruments in developing countries, in Brazil, China, the Republic of Korea and six other countries in Latin America and the Caribbean.

### 3. Organizations outside the United Nations system

106. The international organization outside the United Nations system that has established close working relations with the Commission is OECD. Recently, the member countries asked the Organization to undertake a work programme to analyse key concepts related to consumption and production patterns, to assess relevant trends and examine policy options and tools. In implementing the work programme, OECD will serve as a focal point for communication among its 25 member countries; it will also seek to ensure that the work takes into account the interests and activities of non-member countries.

107. At present, OECD is focusing its work on four main areas. The first one concerns the clarification of the concepts involved, with the aim of creating a common reference framework for discussion and analysis. The second area is problem identification and analysis, including selecting and analysing trends in consumption and their economic, social and environment impacts. The third area is assessing policy options, including the mix of the various instruments and tools that can be used to achieve particular goals. The fourth area is monitoring and evaluation, including through the use of country environmental performance reviews.

## III. CONCLUSIONS AND PROPOSALS FOR ACTION

### A. Summary of findings and conclusions

108. Past trends and current projections suggest that developing countries have been slowly catching up in the consumption of the main categories of materials and are expected to continue to do so in the coming few decades. But in per capita terms, significant gaps between developing and developed countries will remain. These gaps can be narrowed more rapidly only by implementing effective economic development strategies which address the other critical elements of economic and social sustainability identified in Agenda 21.

109. Regarding energy and raw materials usage, considerable progress has been made, especially in developed countries, in reducing the intensity of energy use

and of metals and minerals per unit of GDP. However, problems relating to excessive fertilizer and pesticide and soil quality in the agricultural sector have only just begun to be addressed. Deforestation continues to be unsustainably high.

110. Environmental monitoring data and other relevant information, including consumer information, which are currently lacking in many developing countries, need to be developed urgently so as to provide a sound information base for policy formulation and decision-making on changing the current unsustainable production and consumption patterns. National Governments as well as the United Nations development agencies and international aid organizations should give immediate priority to meeting this need. Developed countries should take the lead in compiling consumer information, since its lack has been commonly identified as a serious constraint on changing consumption habits and lifestyles. Active participation by manufacturers and consumer organizations in this endeavour should be secured.

111. Country experiences show that several types of instruments have been used to change unsustainable production and consumption patterns. Governments mostly start with command-and-control measures, laying down an effective legal framework specifying the responsibilities and obligations as well as the rights of the different groups of the society. In the long run, economic and other market-based instruments seem to be the preferred choice, since they serve as highly effective instruments for the internalization of externalities, generate revenues and promote greater efficiency in achieving environmental objectives. Social instruments, especially education and awareness campaigns, have played a unique and indispensable role in galvanizing society into action and in maintaining momentum for such action. Increasingly, Governments themselves may engage in education and awareness campaigns, as they seek to incorporate environmental education into national curricula and as government agencies try to change their consumption patterns through new procurement policies. Country experiences have shown that results are greatest when a mix of these instruments is employed in light of specific national and local conditions.

112. The present report's short review of technology transfer and eco-labeling has underlined some international dimensions of changing production and consumption patterns. This points to need for greater international cooperation in harmonizing criteria for the setting of voluntary product standards and for the transfer of technology which are dealt with in the context of the Commission's discussions on international trade and the transfer of technology.

113. The report's preliminary analysis based on the integrated life-cycle approach to resource usage has demonstrated the wide scope and multiplicity of the issues related to changing consumption and production patterns. It underscores the need for continuing the traditional emphasis on the supply side, while complementing it with strengthened efforts focused on the demand side. The increasing emphasis on consumers also reflects the conviction that changing consumption habits and lifestyles will eventually persuade manufacturers to develop new products and new production processes. A number of problems call for further and more in-depth discussion, including agreement on an appropriate conceptual and methodological framework for a more systematic and standardized study of consumption and production issues; the need for building or improving

infrastructure which will facilitate a shift to more sustainable consumption and production patterns by households and other end-users; how Governments and major groups could in their own way most effectively contribute to progress in changing consumption patterns, in addition to participating in "green" consumer movements. These and other questions highlight the need for a work programme of the Commission whose main elements are outlined below.

### B. Possible work programme of the Commission on sustainable consumption and production patterns

114. The Commission might consider a multi-year work programme on changing consumption and production patterns having four broad headings:

(a) Identifying the policy implications of projected trends in consumption and production patterns;

(b) Assessing the impact on developing countries, especially the least developed and small-island developing countries, of changes in consumption and production patterns in developed countries;

(c) Evaluating the effectiveness of policy measures intended to change consumption and production patterns such as command-and-control, economic and social instruments, and governmental procurement policies and guidelines;

(d) Eliciting time-bound voluntary commitments from countries to make measurable progress on those sustainable development goals having especially high priority at the national level.

115. The Commission should consider the periodic preparation of reports containing long-term projections of the world economy with a time horizon of up to 40 years. Such reports should, inter alia, build upon the work of the Department of Economic and Social Information and Policy Analysis, on the Global Input/Output Model of the World Economy (World Model), and on the reports it prepares for the General Assembly on the overall socio-economic perspective of the world economy and in the relevant reports of UNEP and UNU. These studies would make use of global models designed to project a number of indicators of environmental stress and their impacts on the environment and on human health. The compilation of resource balance sheets in selected resource using industries would provide useful inputs. Suitable modelling frameworks should be capable of shedding light not only on issues related to the global commons but also on the differences in the relative importance of various sustainable development issues among world regions having different economic and social characteristics.

116. Changes in consumption and production patterns in developed countries can be expected to have a variety of impacts on developing countries. Most of these impacts will be transmitted by the international trading system as markets for some products shrink and others increase. Other impacts would be associated with the activities of transnational corporations as major vehicles for transmitting technology to developing countries. Still other impacts could arise from imitative behaviour of consumers in developing countries as "green consumerism" becomes more fashionable in developed countries. The impact of

eco-labeling schemes on consumption and production patterns in developed countries is of growing importance and in need of systematic analysis. Studies on some of these issues would be prepared in a cooperative effort by many of the international organizations where work is planned or already under way.

117. The Commission may also wish to encourage Governments to support a programme which is under consideration by UNCTAD and UNEP for implementation in collaboration with other relevant governmental and non-governmental organizations. The programme would prepare an initial set of general guidelines and principles on the internalization of environmental externalities for traded commodities in their raw and processed forms; assess the applicability of this set of general principles for specific raw and processed commodities under concrete economic, financial, legal (national and international) and social conditions in selected countries where specific environmental problems or services (positive or negative externalities) associated with these products would be identified; and propose, in the light of this assessment, economic, legal, financial and institutional arrangements which will facilitate the implementation of internalization policies and measures.

118. The Commission may wish to recommend that the Guidelines for Consumer Protection be expanded to contain guidelines for sustainable consumption patterns, including criteria for national eco-labeling schemes based on work under way by the International Organization for Standardization, UNEP and UNCTAD. Regarding the effectiveness of various types of policy instruments , used singly and in combination, the Commission might consider ways to facilitate a sharing of country experiences. It is especially important to be able to measure the impact of both economic and social instruments on the environmental objectives as well as to measure their indirect effects on the economy. To this end, the Republic of Korea is planning to organize in the second half of 1995 a workshop on economic instruments with special reference to the experience of Asian countries. At a later stage more systematic review of country experiences might be organized by the Commission in collaboration with the regional commissions.

119. The Commission may wish to draw the attention of United Nations Member States, United Nations agencies and other international organizations, and non-governmental observers of the Commission to the report on the Oslo Ministerial Roundtable Conference on Sustainable Production and Consumption. 47/ The report was issued in the form of a summary by the Chairperson, Mr. Thorbjorn Bernsten, Norwegian Minister of Environment. It contains a menu of action-oriented recommendations directed towards civil society, labour, business, local governmental authorities, national Governments and international organizations. It organizes these recommendations under three broad categories: improving understanding and analysis; applying tools for modifying behaviour; and monitoring, evaluating and reviewing performance. Special emphasis is placed on energy, transport and the design of cities. The Commission may wish to recommend that the various stakeholders mentioned above use the report as the basis for discussion in suitable forums and, subsequently, report to the Commission on the implementation of those recommendations considered most appropriate, in time for consideration at its fifth session, in 1997.

## Notes

1/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigenda), resolution 1, annex II.

2/ See E/1994/33.

3/ Environmental Trends (Washington, D.C., Council on Environmental Quality, 1989).

4/ Since the estimates are from two different sources, some caution is required in comparing the two sets of data.

5/ Renewable and alternative sources of energy, such as wind and solar energies, are not discussed here, since they represent those sources of energy that are environmentally sound and sustainable. In addition, the Commission at the current session will consider the outcome of the recent special session of the Committee on New and Renewable Sources of Energy and on Energy for Development, which addresses the development and use of renewable and alternative sources of energy in rural areas.

6/ Mostafa K. Tolba and Osama A. El-Kholy, The World Environment, 1972-1992 (London, Chapman and Hall, 1992), p. 374.

7/ For more detailed information, see World Resources 1994-95 (Washington, D.C., World Resources Institute, 1994), pp. 7-8.

8/ Tolba and El-Kholy, op. cit.

9/ World Economic and Social Survey, 1994 (United Nations publication, Sales No. E.94.II.C.1).

10/ The historical pattern of industrialization suggests that the initial period of industrialization is energy intensive, requiring rising fossil fuel consumption. As the industrialization advances, energy demand starts to fall. At the advanced stage, improvements in technology and production processes as well as shifts to information-based production and to service lead to declines in energy consumption per unit of value produced, giving rise to an inverted "U" shape for energy/GNP ratio in the development process. If this pattern is to be repeated in developing countries, rapid increases in energy demand in the developing world seems to be unavoidable.

11/ Monitoring Environmental Progress (Washington, D.C., World Bank, forthcoming), p. 17.

12/ Tolba and El-Kholy, op. cit., pp. 410 and 424.

13/ Monitoring Environmental Progress ..., pp. 13-14.

14/ Ibid. UNCTAD's volume based calculations which have steel, aluminum and copper as the three metals with dominating statistical weight suggest that developing countries accounted for 7 per cent of industrialized countries' metal consumption in 1970 and some 15 per cent in 1988, excluding the former Eastern block countries.

15/ Eduardo Borensztein and others, "The behavior of non-oil commodity prices", International Monetary Fund Occasional Paper No. 112 (Washington, D.C., August 1994), p. 12.

16/ "Agriculture: towards 2010" (C 93/24), p. 64.

17/ Tolba and El-Kholy, op. cit., pp. 292-296.

18/ "Agriculture: towards 2010" ..., pp. 138-141; Tolba and El-Kholy, loc. cit., pp. 292-296.

19/ Ibid.

20/ See Larry Karp and others, "Internalization of environmental damages in the agriculture: effects on environmental and economic variables" (UNCTAD/COM/Misc.67), 19 January 1995, p. 46.

21/ Tolba and El-Kholy, op. cit., p. 168.

22/ "Agriculture: towards 2010" ..., pp. 162-164.

23/ See Brough, "A New Lay of the Land", as quoted in Gunnar Kohlin, "Sustainability, deforestation and policy implications for Africa", in Economic Policies for Sustainable Development, Thomas Sterner, ed. (Dordrecht, Kluwer Academic Publishers, 1994), p. 199.

24/ Official Records of the Economic and Social Council, 1994, Supplement No. 15 (E/1994/33), para. 50.

25/ OECD Economic Studies, No. 19 (Winter 1992).

26/ National Environmental Policy Plan Plus (The Hague, Ministry of Housing, Spatial Planning and the Environment, 1990), pp. 23-43; Towards a Sustainable Netherlands (The Hague, Ministry of Housing, Spatial Planning and the Environment, 1994), pp. 22-28.

27/ EIA is defined as "an activity designed to identify and predict the impact of an action on the biogeophysical environment and mankind's health and well-being, and to interpret and communicate information about the impacts" quoted in Tolba and El-Kholy, op. cit., p. 635.

28/ Environmental Quality (Washington, D.C., the Council on Environmental Quality, 1990), pp. 202-203.

29/ For a detailed discussion of full cost pricing of resources and the closely related issue of internalization of externalities, see "The internalization of environmental costs and resource values: a conceptual study" (UNCTAD/COM/27), 10 June 1994. Also see "The effect of the internalization of external costs on sustainable development" (TD/B/40 (2)/6, 7 February 1994).

30/ These definitions are based on "The internalization of environmental costs ...", annex 1 of which contains a short analysis of the respective merits and inadequacies of these valuation techniques.

31/ For a detailed discussion of methodologies and issues related to environmental resource accounting, see Integrated Environmental and Economic Accounting, Handbook of National Accounting, Series F, No. 61 (United Nations publication, Sales No. E.93.XVII.12).

32/ E/CN.17/1995/18.

33/ Resolution 39/248, annex.

34/ A recent workshop hosted by the Government of the Netherlands on facilities for a sustainable household came up with findings that identify lack of consumer information as a serious bottleneck in several areas of sustainable household consumption, including energy and water consumption, product choice, waste and lifestyles. Lack of adequate feed-back on results of changed consumption patterns also impedes further progress. See "Facilities for a sustainable household", report of a workshop held at Zeist, the Netherlands, 23-25 January 1995.

35/ The Workshop was held in Geneva, 28-29 June 1994. TD/B/WG.6/Misc.2.

36/ For a detailed discussion on policy failure and the environment, see "The internalization of environmental costs ...".

37/ For detailed case studies in OECD countries, see Integrating Environment and Economics: The Role of Economic Instruments (Paris, OECD, forthcoming).

38/ See E/CN.17/1995/8 for further discussion.

39/ Environmental Quality ...

40/ Example used in "The effect of the internalization of external costs on sustainable development" (TD/B/40 (2)/6), 7 February 1994, p. 30, note No. 38.

41/ Integrating Environment and Economics ...

42/ TD/B/40 (2)/6, p. 31, note No. 48.

43/ Ibid., pp. 13-15.

44/ This is so because firms can be assumed to be cost-minimizers. Because of this essential behavioural feature, a well-defined market of tradable permits could allocate control responsibility cost-effectively despite incomplete information on the control possibilities by the regulatory authorities. See Tom Tietenberg, "Market-based mechanisms for controlling pollution: lessons from the United States", in Economic Policies for Sustainable Development, Thomas Sterner, ed.

45/ For detailed discussions on transnational corporations' role in this field, see Environmentally Sound Technologies: Options for Developing Countries (Geneva, UNCTAD, forthcoming).

46/ In the Netherlands, Global Action Plan has adopted an "Eco-team programme", organizing households to voluntarily reduce waste and save energy and water. Initial results indicate that there is great potential for expanding such programmes since participating households are not only contributing to environmental protection and better quality of life but also achieving savings in monetary terms. The experience also points to the need for support from local authorities, such as refunding unused sanitation charges to households, so that concrete benefits can accrue to both households and local governments.

47/ For a more detailed discussion of these elements, see "Elements for an international work programme on sustainable production and consumption", a report of the Oslo Ministerial Roundtable Conference on Sustainable Production and Consumption, 6-10 February 1995.

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# Poverty eradication and sustainable development

## Report of the Secretary-General

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## INTRODUCTION

1. This document reports on progress in the implementation of the provisions of chapter 3 of Agenda 21 1/ and contains proposals for future action for poverty eradication. The report was prepared by the United Nations Department for Policy Coordination and Sustainable Development as task manager for chapter 3 of Agenda 21, in accordance with arrangements agreed to by the Inter-Agency Committee on Sustainable Development at its fourth session. It is the result of consultations and information exchanges between designated focal points in a large number of United Nations agencies, governmental officials and a number of other institutions and individuals.

2. The report emphasizes the need for an enabling strategy to eradicate poverty with the Government and people living in poverty sharing responsibilities in an efficient manner. Consistent with the broad guidelines of chapter 3 of Agenda 21, it explores short-to-medium-term and long-term measures to eradicate poverty and maintain environmental integrity, with the underlying premise that the persistence of mass poverty is a reflection of political and socio-economic structures. The short-to-medium-term strategy is based on the need quickly to raise the incomes of the poor. To that end it proposes the creation of productive employment for the poor through the effective provision of productive assets, complemented by direct anti-poverty governmental measures. The long-term strategy stresses capacity-building, including the development of human resources, institutions and infrastructures; slowing down of population growth; and a re-orientation of development strategies to include poverty eradication as a central objective of development. The issue is addressed from the economic point of view, emphasizing efficiency and economy-wide growth; from the social point of view, stressing equity considerations; and from the political point of view, stressing empowerment of the poor to participate effectively in political and economic decision-making. The basic principle underlying the proposals is that in order to eradicate poverty, economic efficiency, equitable redistribution from growth and provision of social services; and political justice and equality must go hand in hand.

3. To the extent permitted by the availability of information, the report reviews the experiences of a number of countries and non-governmental organizations in combating poverty and the action they propose to take in the future. It also provides an overview of the consensus on poverty eradication reached by a number of major intergovernmental conferences of the United Nations and the strategies put forward by a number of organizations of the United Nations system.

## I. DIMENSIONS OF THE PROBLEM: A CAPSULE OVERVIEW

### A. Definition and extent of poverty

4. Poverty can be measured in both relative and absolute terms. Absolute poverty is generally taken to mean a condition characterized by severe deprivation of essential needs at a basic level such as nutrition, housing, health services, safe drinking water and sanitation facilities and education.

Thus defined, the severity and magnitude of absolute poverty is country-specific and needs to be assessed at the country level for operational purposes.

5. The major common economic characteristic of the poor is that they lack productive assets, either in terms of physical or human capital. In the rural areas, where they are predominantly located in most of the developing regions except Latin America, they are the landless or near-landless illiterate agricultural workers, nomads, fishermen, pastoralists and forest dwellers who eke out a subsistence income from seasonal agricultural employment or from marginal lands and forests or from low-income non-farm work. In the urban areas, they are the unskilled and unschooled people lacking physical capital who depend for subsistence on the low-wage informal sector and the bottom layer of the services sector, without the support of the Government, or who scavenge materials from dumps and the streets. The incidence of poverty is often particularly high among the socially repressed, such as ethnic minorities, including indigenous peoples.

6. Whether in rural or urban areas, people living in poverty suffer from undernutrition, even after spending the bulk of their income on food. Their children are generally below average weight for age and suffer from impaired mental and physical development which jeopardizes their ability to be gainfully employed as adults. Ill-health among the poor is widespread and saps their productive energy, reduces family incomes and prevents children from taking full advantage of education wherever it is available. Average death rates among the poor are higher, as are infant and child mortality rates.

7. Defined by the World Bank as those with incomes below minimal levels permitting a nutritionally adequate diet and access to essential non-food needs, people in absolute poverty in the developing countries numbered 1.1 billion in 1990. This estimate represented an increase of some 100 million over the 1985 level. There is no presumption that these quantifications constitute accurate measures of the extent of poverty. They are meant simply to provide orders of magnitude which are useful from a practical point of view. What is of greater cause for concern is that, on the basis of present policies, medium-term prospects for reducing the number in absolute poverty remain dim. In 1992, World Development Report revised a more optimistic assessment made only two years earlier and assessed the medium-term prospects as follows: "Even under fairly hopeful assumptions about economic recovery in the rest of the decade, the absolute number of the poor in the world at the turn of the century will be higher than in 1985." 2/

## B. The poor and environmental stress

8. Over time, the majority of the rural poor have increasingly become clustered on low-potential land. Some 60 per cent of the world's poor live in fragile and highly vulnerable areas - arid and semi-arid lands, steep slopes and forests. 3/ This has been the result of a combination of factors, with some playing a more important role in some countries than in others, such as expropriation, demographic pressures and intergenerational land fragmentation, privatization of common lands, and consolidation and expansion of commercial agriculture with reduced labour inputs. Of these factors, demographic pressures

continue to play an inexorable underlying role in the geographical and economic and social marginalization of the poor in most countries with high incidence of poverty.

9. Either pushed out or squeezed out of high-potential land, the rural poor have no choice but to over-exploit the marginal resources available to them through low-input, low-productivity agricultural practices - overgrazing, soil-mining and deforestation, with consequent land degradation. Land degradation has certainly not been caused mainly by the poor. Most deforestation has been caused by logging interests and/or rich farmers with considerable concessions. Soil erosion, waterlogging and salinization, which have resulted in desertification in many parts of the world, have been caused by rich farmers with considerable financial support.

### C. Environmental degradation and the health of the poor

10. The rural poor suffer from ill-health mainly on account of undernutrition and/or malnutrition. Their health is further undermined by various forms of pollution and agricultural hazards - most importantly, by water pollution, since they depend for drinking water on heavily polluted water bodies; lack of sanitation facilities; indoor air pollution from the use of biomass fuel for cooking and heating; and inadequate shelter.

11. The urban poor are victims of all forms of environmental degradation. Over 130 million of the developing world's poor live in the worst parts of urban areas. 4/ Whether due to absolute shortage of land or high rents on serviced urban lands, these people cluster in slums and squatter settlements in the urban periphery in areas prone to hazardous natural and man-made environmental conditions such as flood plains, slopes or on land adjacent to dangerous industries and dump sites. They have to contend with bad sanitation, contaminated water, floods and landslides and chemical pollution. According to WHO, an estimated 600 million urban dwellers in the developing world live in what might be termed life- and health-threatening circumstances. The most vulnerable are those in absolute poverty. 5/

## II. IMPACT OF PAST POLICY ON POVERTY

### A. Impact of economic policy

12. In the decades preceding the 1980s, interest rate, exchange rate and trade policies meant to promote industrialization through import substitution are known to have induced capital intensity in industry. Until recently the phenomenon was widespread throughout the developing world. Thus the expectation that economic diversification from agriculture into industry would help absorb the rural labour force into higher productivity employment failed to materialize fully in most developing countries. Two other major factors contributed to this outcome: one was widespread governmental controls on industrial activity, which stalled industrial expansion in the first place; the other was high rates of population growth which swelled the labour force. Investment rates varied among

countries but generally fell short of the requirements for creating adequate employment.

13. Public-sector investments in agricultural infrastructure have been substantial in developing countries. Whether adequate or not from the point of view of raising agricultural productivity and expanding agricultural production, they have had a tendency to be biased towards areas owned by large landowners to the neglect of the peasant sector. In many countries, agricultural marketing boards, established originally to stabilize the prices of farm products, ended up squeezing the profits of farmers through low prices, either to provide cheap food to urban dwellers or to generate revenue for the Government. This practice discouraged investments in agriculture and resulted in sub-optimal agricultural expansion. In some countries, changes in pricing policies, while succeeding in increasing agricultural production, have aggravated poverty, especially in urban areas, by raising the food bill. Subsidized mechanization and modern inputs, while contributing to agricultural yield, reduced the demand for agricultural labour. Subsidized credit has tended to benefit mainly large and medium-sized farmers.

## B. Impact of policy in the social sectors

14. Social spending has varied from country to country. Significant, although uneven, progress has been achieved, which is reflected in the improvement of a variety of social indicators. By and large, however, social spending has been insufficiently directed to the poor and to the very poor in particular. For instance, in many countries there has been an overemphasis on expensive curative health care, limited mainly to the cities, to the neglect of the cheaper preventive care that could be extended to rural areas without too much strain on the government budget.

15. Education, like health, tends to be concentrated in the urban areas. Many countries spend major portions of their education budget to provide free university education which is enjoyed overwhelmingly by the children of the middle and upper classes who could afford to pay for it in whole or in part while they neglect primary education, especially in areas where most of the poor reside. An even more serious problem is the quality of education, which varies widely not only from country to country but also within countries between urban and rural areas. For various reasons the quality of education is much worse in the rural areas and in urban shanty-towns, which puts children from those areas at a disadvantage, especially in the industrial job market.

16. The problem with housing is similar. In many countries, the bulk of public housing is meant for the urban working class and civil servants while the poor are for the most part ignored. Even sites-and-services schemes usually end up benefiting the non-poor. In some cases, they are actually harmed - for example, by shanty-town clearance without provision for relocation.

17. Much the same is true for subsidized distribution of food to the poor. Its effectiveness depends on targeting. Many countries allocate considerable proportions of public expenditures for food subsidies, but the bulk of those allocations go to civil servants, the police, families of the armed forces, and

factory employees - in sum, largely to urban areas where they benefit middle-income groups, while the rural and urban poor benefit only marginally. In the 1980s food subsidies were often actually phased out as part of stabilization measures.

## III. GENERAL OVERVIEW OF STRATEGIES TO COMBAT POVERTY

18. In this section an attempt is made to adhere to the indicative guideline provided in paragraph 3.2 of Agenda 21 - namely, that "an effective strategy for tackling the problems of poverty, development and environment simultaneously should begin by focusing on resources, production and people and should cover demographic issues, enhanced health care and education, the rights of women, the role of youth, and of indigenous people and local communities and a democratic participation process in association with improved governance". 1/

### A. Reorientation of economic policy: stabilization and structural adjustment

19. Since the early 1980s, stabilization and structural adjustment measures have been implemented in most developing countries, to varying degrees, in order to correct past policy mistakes. The framework of policy reform is comprehensive, encompassing macroeconomic, sectoral and even micro-economic policies. The broad goals are to rationalize demand management in order to eliminate excessively high public-sector deficits which fuel inflation and are translated into external imbalances; remove price distortions (wage rates, interest rates, exchange rates and commodity prices) and improve allocative efficiency; reduce the presence of the public sector in directly productive activities so as to eliminate the losses of State-owned enterprises which often operate inefficiently and constitute a drain on the government budget; remove unnecessary controls and regulations on private-sector industry; liberalize trade policy in order to promote exports and increase competition; restructure government spending in the direction of priority sectors, such as economic and social infrastructure; and enhance the efficiency of public sector enterprises.

20. Policy reform is necessary for long-term sustained growth and needs to be implemented in a sustained manner. Implementation of reform measures without the provision of safety nets, however, has exacerbated the poverty situation, at least in the short run. It is realized now, at both the national and international levels, that stabilization and structural adjustment programmes should include safety nets as an integral element so as to protect vulnerable groups effectively during the transition to sustained growth.

### B. Need for discretionary measures to eradicate poverty

21. Since poverty is a social phenomenon associated with a high degree of inequity in the distribution of political and economic power, its eradication calls for shifts of major significance in the structure of political and economic systems. The foremost requirement for the elimination of poverty is a strong political commitment to that end. Given the political commitment and a

policy framework conducive to economy-wide efficiency and growth, the most effective approach would be a set of enabling measures that would empower the poor economically to lift themselves out of poverty. The concept of an enabling strategy does not imply any diminution of government responsibility. What it does imply is that the Government and the poor should share responsibilities in the most efficient way possible.

22. It is evident that low-income countries with a high incidence of poverty cannot generate adequate resources to provide directly for the poor. They cannot afford adequate resources even to cover all the poor by their conventional poverty mitigation schemes, even if the schemes were to operate optimally. Economic growth is important for poverty reduction but past experience indicates that the "trickle down" process is too slow in reducing poverty and particularly so in the context of high population growth and land scarcity. In this regard the experience of the second half of the 1980s, for instance, is worthy of note. In its 1992 World Development Report, the World Bank states that there was "a negligible reduction in the incidence of poverty in developing countries during the second half of the 1980s". 6/ With very strong economic growth in South Asia, where over 50 per cent of the absolute poor of the developing world are located, the percentage of population in absolute poverty declined by some 2.8 per cent but the number of people in absolute poverty rose by 30 million. At this rate it would take South Asia almost a century to eradicate absolute poverty. Since the rate of growth achieved in the second half of the 1980s cannot be expected to be sustained over that long a period of time and since population is not likely to stabilize for at least another half century, poverty eradication through current patterns of growth would seem to be an illusive goal in South Asia. More importantly, in China, which also experienced strong economic growth, the poverty situation actually worsened in the second half of the 1980s as a result of the evolution of a more uneven distribution of income. Only in South-East Asia did poverty decline both as a percentage of population and in numbers. In all the other developing regions, as a result of weaker economic growth and/or rapid population growth, the incidence of poverty increased both in numbers and as a percentage of population. It must be fully recognized that factors that make for maximum economic efficiency are not necessarily conducive to equity. Hence, the urgency of governmental intervention - not to provide directly for the poor but to enable the poor to provide for themselves through poverty-reducing growth strategies.

23. While the general thrust of chapter 3 of Agenda 21 on "combating poverty" is long term, calling for a specific long-term integrated strategy for poverty eradication and sustainable management of the environment, chapter 3 also emphasizes the need for measures to combat poverty in the short term. Objective number one of the chapter is to provide all persons with the opportunity to earn a sustainable livelihood through special policies and programmes that contain immediate measures enabling local community groups to alleviate poverty and develop sustainability.

## C. Measures for combating poverty

### 1. Short- and medium-term employment and income-raising measures

#### (a) Rural measures

24. Since poverty is a multidimensional problem, no single measure to combat it will suffice, in the short term, medium term or long term. A package of complementary measures is needed, of which the most important is the provision of adequate productive resources that will enable the poor to raise their own incomes through productive activities.

25. For the rural poor who constitute the bulk of the poor in developing countries and who are unskilled and illiterate, the most effective approach to providing them with productive assets is agrarian reform - redistribution of land and reform of tenancy laws. This basic measure can be complemented by others, notably:

(a) Promotion of agro-industries;

(b) Expansion of animal husbandry - poultry farming, fish farming where feasible, silviculture, etc.;

(c) Provision of training facilities in simple artisan and craftsmanship skills which can be acquired quickly even by illiterate people;

(d) Government work programmes for the construction of social and economic infrastructure;

(e) Food subsidies for those whose incomes cannot be raised by the above activities.

26. Land redistribution in economically viable units, security of tenure and fair land rents for tenants and sharecroppers can lead to increased growth of agricultural production. Together with price reform, fair agricultural taxation policies, marketing facilities and access of small farmers to water, credit, extension services and appropriate technology, land redistribution can raise the incomes of the poor, reduce substantially the high initial inequality in the rural distribution of income and reduce pressure on marginal lands. Such reforms, by raising the incomes of the poor, will also reduce the need for large-scale poverty mitigation government schemes - food subsidies, food for work programmes, child nutrition and so on. In this regard the International Fund for Agricultural Development (IFAD) has observed "that poverty should be confronted directly at its roots by overcoming the constraints that give rise to it rather than merely treating the symptoms of poverty through welfare transfers". 7/

27. What is needed and what may be feasible is not an egalitarian redistribution of land but rather access of the poor to land in minimally viable units that are adequate for them to make a decent livelihood without drastically affecting the holdings of large land-owners. The feasibility of implementing

land reform programmes varies from country to country. It would be relatively more feasible politically in countries where arable land to rural population ratios are still high, such as those in Africa and Latin America. Land can be redistributed in these regions in economically viable units without reducing the holdings of large land holders significantly. Where necessary, such as in Africa, redistribution needs also to be accompanied by the institution of ownership rights, individual or cooperative, so as to encourage small-holders to invest in their lands and cultivate them sustainably. Even in countries where the ratio of arable land to rural population is relatively low, if the distribution of land ownership is highly skewed, it would be possible to redistribute land to the landless poor without drastically affecting the holdings of big land owners. Land taxation based on potential production can facilitate voluntary redistribution of land, while stimulating its productive use and augmenting fiscal revenues. In some countries, where land fragmentation has reduced small-holdings to unviable sizes, it may be necessary to consolidate land, for example, in the form of cooperatives, to ensure more productive farming.

28. In all developing countries there is considerable scope for labour absorption in the rural areas through the promotion of agro-industries, both in agricultural raw materials and food commodities. Agro-industries are desirable not only for employment creation for the poor but also for general economic growth. Expansion of animal husbandry - fish farming, poultry farming, silviculture, etc. - either for domestic consumption or exports can also provide additional high income employment to the poor. The main obstacles to exports of processed agricultural products, at the present time, are tariff barriers in the industrial countries escalating with the degree of processing. Greater market access to processed agricultural commodities would be of immense benefit in terms of poverty alleviation, even in the medium term.

29. Much can be done in a relatively short time-frame for considerable numbers in the vast pool of unschooled and unskilled young people past the school age through the provision of facilities for the development of artisan and craftsmanship skills. Such skills are at present limited in diversity in the rural areas and are acquired through long years of exploitative apprenticeship which serves as a disincentive to most poor young people. A wide range of non-farm labour-intensive activities are possible in rural areas, given the requisite skills, with very little capital and using simple hand-powered machines without the whole complex of industrial infrastructure. Some necessary requirements in addition to training facilities are institutional facilities, particularly for credit and marketing. The development of such skills can be based on potential demand for products, utilizing them either in the domestic or the international economy.

30. Past experience has shown that governmental programmes cannot serve as an effective basic strategy for combating poverty because, although they benefit some poor people, they are generally inadequate and often unsustainable on account of budgetary constraints. Directed towards the construction of necessary social and economic infrastructure, they can none the less serve as a useful complement to more effective employment- and income-creating measures. Such work programmes need to emphasize productive employment such as reclaiming land for agriculture, afforestation and reforestation; building rural roads,

health centres, school buildings and drainage canals; infrastructure for sanitation, safe drinking water supply, irrigation and waste collection and disposal; all of which are badly needed.

(b) Urban measures

31. An urban strategy for the short and medium term should aim at reducing the large numbers of underemployed currently engaged in the so-called informal sector and low-wage services sector by increasing labour absorption in modern formal industry. Even more important, meaningful support needs to be given to small-scale enterprises including microenterprises and cooperative ventures in order to raise the productivity of the poor and maximize productive employment. Such a strategy would include liberalization of industrial regulations, provision of credit and marketing facilities and facilities for training in simple skills. Depending on the extent of urban poverty, the short-to-medium-term enabling solution will have to be supplemented by anti-poverty schemes to provide productive employment to the urban poor of the type mentioned above, complemented by targeted food subsidies.

2. Long-term employment and income-raising measures

(a) Rural measures

32. Land reform, where feasible, will have an immediate impact on poverty and, if effectively implemented, is likely to keep the beneficiaries above the poverty line for quite some time - about a generation - but by itself it will not be adequate as a long-term solution for poverty eradication. This is because, in the long term, possibly in a generation, the redistributed land will again undergo fragmentation under population pressure and become economically unviable. It will, however, allow time for the implementation of longer-term measures that will be needed to strengthen the ability to combat poverty or to prevent a resurgence of mass poverty. A longer-term solution for poverty eradication would include four broad measures in the framework of macroeconomic and trade policies conducive to economy-wide growth:

(a) Encouragement and creation of non-farm rural industries;

(b) Expansion of agro-industries and animal farming;

(c) Investment in human resources development;

(d) Control of population growth.

These are long-term solutions, because non-farm rural industries can reach a significant scale only gradually due to the long gestation periods of complementary investment involved in physical infrastructure, human resources and institutional capacity; also population growth can be slowed down only gradually.

33. It is generally recognized that the capacity of agriculture to absorb the growing labour force on a long-term basis is limited in most of the developing

countries with a high incidence of rural poverty by the sheer unavailability of additional arable land. More importantly, the labour force in agriculture is more likely to shrink than to expand with growing modernization and mechanization which is necessary for raising agricultural productivity and efficiency. This trend should be welcomed since it will also permit the release of land from agriculture for reforestation which will be necessary not only to prevent land degradation but also to rehabilitate watersheds and meet the need for industrial wood and fuelwood.

34. The solution to the growing net rural labour force cannot be found mainly in migration from rural areas to the existing large urban agglomerations either, since increasingly large numbers of people born in the urban areas themselves are becoming marginalized. The most effective solution lies in the creation of non-farm rural industries and services based on small-scale and microenterprises in small towns and villages. This would constitute the basic element of the long-term poverty eradication strategy. A crucial requirement to success will be the creation of industrial infrastructure in suitably located small towns and villages, accompanied by credit and marketing facilities. The spread of small-scale and microenterprises in rural areas will help contain rural-to-urban migration, which will reduce competition for jobs among the urban poor and the cost to Government for providing social services. It will also create additional employment in existing urban areas through increased demand for simple tools, intermediate inputs and transportation facilities.

35. In the longer term, the development of agro-industries and animal husbandry is likely to play a significant role in the absorption of rural labour in more productive employment. One reason is the gradual liberalization of agricultural trade which is likely to reduce barriers to processed agricultural commodities from developing countries. Another is the dramatic growth of urbanization in developing countries. Demographers expect that by the year 2025, some 47 per cent of the population in the developing countries will live in urban agglomerations, as compared to 29 per cent at the present time. Concentration of people in urban areas in such proportions will require large inventories of foodstuffs in urban areas, much of which will be economically feasible only in processed form.

(b) Urban measures

36. A long-run solution to the eradication of urban poverty should include substantial deregulation in the formal urban industrial sector and adequate macroeconomic policies. Such policies would aim at low rates of inflation, price flexibility and largely market-determined interest rates and exchange rates. This would encourage entrepreneurs to choose labour/capital ratios that reflect true scarcities. Trade policy and tax regimes should be designed so as not to serve as disincentives to exports. Such policies would encourage faster industrial expansion and increased employment. The pace of their implementation is often hampered by various considerations - notably, the fear of political and social consequences of short-term adverse effects which could be averted through the integration of appropriate safety nets in policy reforms.

37. Labour-absorption by the industrial sector also depends to a great extent on the availability of a skilled labour force. Human resources development is,

accordingly, a necessary condition for the success of a strategy aiming at greater labour absorption in modern industry. However, even with optimal policies, the modern sector alone cannot usually provide adequate employment opportunities for the bulk of the rapidly growing urban labour force. Thus, in addition to the provision of appropriate training for all levels of industry, enabling measures, such as special credit facilities, are needed for smaller enterprises, including microenterprises.

(c) The services sector

38. In most developing countries, the service sector already accounts for high proportions of gross domestic product but the bulk of the service sector, both in rural and urban areas, offers only low-wage, low-income employment in which large numbers of the poor are engaged. The expansion of urban industry and non-farm rural industries would create higher productivity employment in the service sector, such as repair and maintenance of plant and equipment, transportation, telecommunications and home appliances, which would require greater investment in education, particularly in the training of the poor in appropriate skills. Another area that will offer considerable scope for remunerative employment and that needs greater attention in the future in the developing world is tourism. It is estimated that in 1995 gross travel and tourism output will amount to $3.4 trillion and account for 10.9 per cent of world gross domestic product, of which the share of OECD countries will be 78 per cent. By 2005, gross travel and tourism output is projected to more than double in size, to $7.2 trillion. 8/

## 3. Human resources development

(a) Education

39. Measures to increase employment and incomes, such as those discussed above, depend critically on the building of human capacity for their success. Thus basic education, which provides a foundation for acquiring specialized skills, should be extended to all, including girl children, an agreed objective of the Jomtien Declaration. 9/ A major reform measure needed is to introduce facilities for training in skills as a complement to general education, particularly at the post-primary level. Efforts should be made to put in place a full programme of general secondary education for all, as soon as possible, in order to build a solid foundation for the acquisition of skills. These measures are needed to achieve the diversified and increasingly sophisticated skill structure required for the growth of both urban and non-farm rural industries.

(b) Health, sanitation and safe drinking water

40. It is generally recognized that the earnings approach to combating poverty is not adequate, because some things may simply not be available for the poor to buy. This applies most generally to services that are often or mainly public monopolies or are publicly controlled and which call for considerable investments in the related infrastructure, which are not likely to be undertaken by the private sector because of the low effective demand of the poor. Health care, sewerage and safe drinking water are typical examples. With rising

incomes the poor should be able to afford rudimentary but satisfactory sanitation facilities with some technical advice on sewage disposal facilities from the Government, but it will remain the responsibility of the Government to provide basic health care and safe drinking water facilities to the poor wherever they are located. In the area of health care, coverage can be considerably increased through a shift of emphasis from curative to preventive health care. Access to safe drinking water can be greatly expanded by charging user fees. User fees should be imposed or raised to realistic levels on those who have the ability to pay. The extreme poor should be exempted from such charges. Community participation through "sweat equity" in the building of small-scale water-supply facilities and health centres from which the participants derive direct and exclusive benefits can also help lighten the governmental budgetary burden.

41. Urbanization in developing countries has been accompanied by considerable stress on the natural environment and the health of the urban poor. The urban poor are the primary victims of municipal sewage discharged into water bodies and the improper disposal of solid waste and toxic chemicals. The urban poor need to be protected from the immediate threats to life posed by unhealthy sanitation facilities, contaminated water supplies and indoor air pollution. Regarding sanitation facilities, a wide range of effective technologies that are much cheaper than the conventional capital-intensive technologies and which use locally manufactured hardware - plumbing, concrete caps, etc. - are available.

42. As far as safe drinking water supply is concerned, cities can encourage water conservation in water-intensive industries as well as in the services and residential sectors and increase the resources available for expanding infrastructure, by ensuring that non-poor water consumers pay realistic prices for water and by better maintenance of existing distribution systems to prevent leakage. The amount of leakage is so large that better maintenance of the existing distribution systems alone may suffice to provide safe drinking water to most of the still unserved urban poor in many countries. Where necessary, these measures need to be supplemented by the development of additional supplies to meet the minimum needs of the poor, at least through public stand pipes. Such measures would enable Governments to meet the basic health needs of the poor, such as those identified at the 1978 International Conference on Primary Health Care. 10/

(c) Food subsidies

43. Food subsidies targeted to the absolute poor can play an important complementary role as a safety net, even in the medium term and the long term, until the income-raising measures cover nearly all the poor. To eliminate hunger and malnutrition, increased efforts are needed to implement the outcomes of the 1992 International Conference on Nutrition. 11/

(d) Adequate housing

44. Good health requires not only adequate nutrition, health care and safe drinking water but also adequate shelter, which at a minimum is sufficiently roomy, free of dirt, well ventilated, well lit by sunshine and capable of withstanding the inclemencies of weather. At present, the shelters of the poor,

whether in rural or urban areas, do not meet any of these basic requirements since insufficient progress has been made in implementing the recommendation of the Global Strategy for Shelter for All by the Year 2000. 12/

45. In rural areas, efforts need to emphasize enabling the poor to build their own houses, using local materials with appropriate technical advice from the Government, access to materials and where necessary access to building sites, particularly to the landless. Meeting the adequate housing needs of the urban poor will pose a special challenge. Building land and materials are more expensive than in rural areas and well beyond the reach of the absolute poor, even for very modest but adequate housing. Given the low effective demand of the poor, provision of housing to them by the market is not viable either. The available options would be to subsidize the rents of the poor to induce the market to produce housing for them; to provide the poor with technical advice and subsidies for materials and building sites to enable them to build their own housing; and to make available public housing to the poor at affordable rents. All three options will involve heavy public outlays, but one or some combination of them need to be chosen if the urban poor are to be adequately housed. Caution needs to be exercised to ensure that, in whatever form housing subsidy is provided, it is directed strictly to the poor. The recommendations adopted at the forthcoming United Nations Conference on Human Settlements (Habitat II), scheduled for 1996, will have relevance to Governments in this regard.

46. Solutions to indoor air pollution are more difficult to find. While technologies to use energy more efficiently and mitigate adverse health effects are available, their use requires financial resources that the poor do not have. The ultimate solution thus lies in measures to raise the income of the poor quickly or to reduce the cost of alternative technologies drastically - solar stoves, more efficient and less polluting conventional stoves, using biomass as fuel. To deal effectively with the growing waste problems, emphasis needs to be placed on waste prevention, minimization and re-use. In this area there is not only need for more stringent environmental laws, there is also room for economic instruments and, of course, many forms of local action. Hazardous toxic materials may have to be banned outright.

(e) Population policies

47. Long-term poverty eradication also requires the implementation of appropriate population policies. Because of demographic dynamics, population growth cannot be slowed down rapidly, which underscores the urgency of implementing the recommendations of the International Conference on Population and Development 13/ by ensuring the full participation of the intended beneficiaries, particularly women, in the design and implementation of quality reproductive health services, including family planning. Poverty eradication measures, if successful in raising the levels of income, education and health of the poor, will themselves serve to slow down population growth and will thus enhance the effectiveness of population policies.

## D. Socio-political empowerment of the poor

### 1. Fuller participation of the poor and the role of non-governmental organizations

48. There is a growing realization that the economic matrix of poverty and the possibilities for change are intimately linked to the structures of political and social systems in countries with a high incidence of absolute poverty. Poor people are poorly educated, imperfectly aware of how their own political systems and institutions work, and are unorganized. By definition they lack economic leverage and even in democratic societies are unable to translate their voting power into political power, which is necessary for steering socio-economic change in their favour. Vested interest groups are often successful in resisting the introduction of measures intended to combat poverty, unless and until a major crisis occurs which catalyses socio-political reform.

49. The measures outlined above would have a greater chance of implementation if the poor participated more fully in local and national politics and socio-economic institutions. A decentralization of political authority to the provincial and local levels would greatly enhance the opportunities for participation of the poor. Even in a democratic society the poor need some enabling measures in order to participate effectively. They need to be organized and trained in how to claim their legal rights effectively. Much of the enabling work can be accomplished by those non-governmental organizations that are willing to operate in an independent, professional, transparent and accountable manner. Non-governmental organizations can also perform advocacy functions on behalf of the poor at the national and provincial levels, but only if they have established a clear legitimacy to speak for their constituencies. The ultimate aim of non-governmental organizations, however, should be promotional and educational, with a view to enabling the poor to organize themselves.

50. The direct involvement of the poor in local development organizations can often enhance their effectiveness. Such organizations can take many forms - producer cooperatives, consumer cooperatives, savings and credit cooperatives, training organizations and self-help organizations engaged in building small-scale irrigation facilities, health centres, small-scale local water supply facilities, school buildings etc. Care should be taken to ensure that the activities of self-help local organizations are geared to benefit and not to exploit the poor.

### 2. Empowerment of women

51. Social and legal reforms are needed in many developing countries to enhance the participation of women in socio-political and economic institutions. In many countries they are denied many rights, either by law or tradition. For instance, they are often denied the right to participate in such organizations as cooperatives and credit institutions. They are often denied the right to own land and other property, and a high proportion of them are denied access to education. Such deprivations make it difficult for poor women to lift themselves out of poverty. Many Governments have taken remedial action, but

most Governments need to do more to enable women to enjoy the same rights as men. Administrative and legal reforms and changes in customs and attitudes are likely to be achieved through greater democratization, sensitization of the general public to the potential contribution of women to socio-economic development, and - most importantly - through the education of women, which is one of the most important means of empowering them. Ultimately it is education that will enable women to claim their legitimate rights. It is also an area in which there is likely to be less opposition to governmental action from traditionalists opposed to social change. The education of women will also have an immense influence on population growth. To combat poverty, measures to provide poor women with access to productive assets, including credit, ought to be accorded especially high priority. The forthcoming Fourth World Conference on Women is expected to provide guidelines and priorities for action in favour of women.

### 3. Action in favour of indigenous peoples

52. Among the poor, indigenous peoples constitute a special group because they live largely outside of mainstream society. Their number is estimated at some 300 million. 14/ Most indigenous communities experience encroachment on their lands and natural resources by outsiders. They often lack clear land ownership rights or suffer from constant violation of their statutory rights. Recent World Bank studies of indigenous peoples, particularly in Latin America, reveal that they fall in the category of the poorest and most destitute, with the highest rates of infant mortality, childhood malnutrition and the lowest rates of literacy and schooling. One World Bank study states "that historically indigenous lands have been appropriated by outsiders, and indigenous labour has been utilized for indentured or low-paid work in mines and on ranches and plantations". 15/

53. Of late, a large number of indigenous organizations have emerged and are reaffirming their rights, cultural values and identities. Their platforms are based on combating negative attitudes towards indigenous peoples; participation in local decision-making and development policies; preserving their languages and cultures; and, most importantly, maintaining control over indigenous lands and natural resources. Increasingly, indigenous organizations are also asking for a larger share of national development budgets for their constituencies and are approaching international agencies to provide financial support and technical assistance for their development projects.

54. Emphasis needs to be placed on granting indigenous peoples secure property rights which are necessary for their economic well-being and its sustainability. Secure property rights need to be accompanied by human capital formation in terms of better schooling, training and health services and by employment-generation schemes to reduce their dependence on the informal sector. In order for them to realize their socio-economic objectives, whether integration into mainstream society or preservation of indigenous cultures, indigenous peoples should be enabled to participate actively in the formulation and implementation of development projects meant for them by their national governments and/or the international community. It is hoped that during the International Decade for Indigenous People which commenced in 1994, the international community will

strive to restore to indigenous people their legitimate rights and ratify ILO Convention No. 169 concerning indigenous and tribal peoples.

### 4. Measures for other special groups

55. In all countries there will be some groups of people, such as the physically disabled, the mentally handicapped, the aged, orphans and abandoned children, who will not benefit adequately, if at all, from employment-creating measures. The only possibility for these groups of people to attain adequate standards of living will be social assistance designed to meet their needs.

## IV. SUSTAINABLE RURAL DEVELOPMENT AND POVERTY ERADICATION

### A. Sustainable development of high-potential land

56. In order to improve agricultural productivity, which is necessary for overall economic growth, raising export earnings and enhancing food security, and to take the pressure off marginal land, greater attention needs to be paid to high-potential agricultural land. Under optimal conditions and through intensive cultivation, such areas as the central plains of India, the fertile plains and savannah belt of Africa, and the high savannah and Pacific lowland plains of Central and South America could produce enough food to meet the demand of growing populations. High-potential areas can generally sustain intensive crop production, as long as exploitation does not exceed the regenerative capacity of the soil. Agricultural productivity can be further increased through agricultural research, including safe biotechnology. The ecological challenge in high-potential areas is to implement land, water and other input management that will ensure that increased agricultural productivity does not cause land degradation in the long term. To that end it will be necessary to remove incentive regimes that encourage intensive and inefficient use of water and chemical inputs, to control their use by user charges, to adopt appropriate cultivation methods to prevent soil erosion, and to ensure that the construction of irrigation facilities meets ecological requirements. The incipient consumer movements in the industrial countries to favour agricultural products that are produced in a socially and environmentally sustainable manner may induce a change in the mode of agricultural production.

57. Some 250 million of the very poor people of the world live in areas of high-potential land. However, the benefits from increased agricultural production and productivity do not necessarily trickle down to reduce either inequality or absolute poverty levels in rural areas. Labour created by agricultural modernization can be retained in the high-potential areas by a combination of greater access to land and the creation of productive employment through the development and/or expansion of agro-industries, animal husbandry and non-farm rural industries.

## B. Sustainable development of low-potential land

58. Although the growth of agricultural production will have to rely on the intensification of agriculture on high-potential land, investment in low-potential land will also be necessary, both to alleviate rural poverty and to prevent further degradation of land. Low-potential lands are generally dry lands, often subject to drought and desertification, mountain ecosystems and saline lands. Hundreds of millions of poor people live on such land and need assistance in changing their mode of farming.

59. Land degradation in marginal areas has occurred not necessarily because of the influx of growing numbers of the poor but primarily because the poor have not been provided with the infrastructure and inputs necessary to move beyond subsistence farming and herding, which deplete soil fertility. It is well known that the type of farming that is economically and ecologically sustainable on marginal land consists of intensive cultivation of tree and bush crops, and not field crops. Poor farmers should therefore be helped to switch from subsistence field crops to sustainable commercial farming of tree and bush crops. This type of farming requires irrigation facilities, better transportation and marketing services, and more capital, but it has the potential of raising the incomes of the poor and providing plant cover to the land, thus preventing further degradation. Sustainability will also require more investment in agricultural research and extension services for marginal lands and the institution of property rights, if they do not exist, taking into account traditional and/or customary rights, including communal shifting or migratory land-use rights. A certain amount of traditional food crops can still be grown on marginal lands through new techniques akin to agro-forestry. In drought-prone areas it will be necessary to establish alternative livelihood projects through investment in the development of non-farm productive activities. Promoting the sustainable use of drylands in a manner that ensures a decent living for those who depend on them is essential. In order to avoid further degradation of marginal lands, developing countries and the international community must implement urgently the provisions of the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa. 16/

## C. Rehabilitation of degraded land

60. In view of the constraints on increasing cropland in most developing countries, the prevention of further degradation needs to be supplemented by measures to rehabilitate the already degraded land, both in high-potential and low-potential areas. Although not much has been accomplished so far in the way of rehabilitation, efforts have been initiated in a number of developing countries. Depending on the extent and nature of the degradation, however, rehabilitation using currently known techniques can be very costly. Furthermore, investments in rehabilitation activities have opportunity costs, one of which is foregone investments in irrigation, transportation and marketing facilities, especially in marginal lands. Prospective investments in the rehabilitation of degraded land should therefore be assessed against this alternative.

### D. Reforestation and afforestation

61. Afforestation and reforestation are badly needed in many developing countries in order to meet local needs for fuelwood and for the restoration of degraded watersheds so as to increase water supply for agriculture and other uses. Intensification of agricultural production in high-potential areas will make it unnecessary to clear more forests and will free marginal land from agriculture, which then can be reforested. Switching from field crops to tree and bush crops in the marginal areas would, at once, amount to reforestation and afforestation. Reforestation offers not only environmentally positive benefits but also economic benefits. In view of the growing scarcity of wood resources for industry, plantation forestry is also an economically viable option. Afforestation programmes would quickly provide gainful employment to the poor and in the medium and long term increase the supply of fuelwood, industrial wood and water supply as well as increase the earth's supply of carbon sinks.

## V. RESOURCE MOBILIZATION FOR POVERTY ERADICATION: NATIONAL EFFORTS AND INTERNATIONAL COOPERATION

### A. National efforts

62. The implementation of the strategies outlined above will call for additional budgetary resources and a reallocation of governmental spending. The budgetary burden will increase in the short and medium terms in connection with the extension of economic and social infrastructures to the rural areas and the unserviced urban periphery and inner-city slums where the poor are living. It will also increase to the extent that it will be necessary to create government work programmes and to subsidize the food and housing needs of the poor. Adoption of environmentally sustainable technologies and practices will further add to the short-term budgetary burden.

63. In the context of the structural adjustments that are being gradually carried out by developing countries, there is little or no room for an increase in income and profit taxation. It may be possible to generate some additional revenues through increased taxation of luxuries. Increased indirect taxation of necessities would hurt the poor most severely. In the short and medium terms perhaps the most effective measure to increase government revenue would be to broaden the tax base through a reduction or elimination of exemptions, concessions, and tax holidays and to strengthen tax administration and collection. In the longer term, the generation of additional revenues will depend on the pace of economic growth.

64. Increased emphasis will have to be placed on the reallocation of government spending. Increased efforts are also needed to achieve, through appropriate charges and taxation, greater cost recovery from public investment in economic and social infrastructure that contributes directly to productivity, income and the appreciation of real estate. User charges on secondary and tertiary education, preventive health care, water supplies, electricity and so on, based on the ability to pay, will also help to increase government revenues. In all these areas user charges should be so designed as to achieve a satisfactory measure of cross-subsidization, with the burden falling initially on the

non-poor. As a general principle, when it comes to essential services for the poor, access ought to take precedence over cost-recovery.

65. Enlisting the full participation of the poor in the design, planning and implementation of anti-poverty programmes and projects will help indirectly by lightening the government budgetary burden. Administrative costs will be minimized, and increases in financial outlays contained. Even greater expenditure savings may be possible through the reduction of unproductive government expenditures, such as untargeted subsidies, military expenditures and "white elephant" investment projects. Moreover, the initial budgetary burden would be expected to decline as the employment and incomes of the poor rise and direct poverty mitigation measures are phased out.

## B. International cooperation

66. While the major responsibility for eradicating poverty rests with the developing countries themselves, international cooperation is indispensable in order to supplement efforts at the domestic level. Perhaps the most effective area of international cooperation is international trade. Developing countries need expanding markets for their exports in the developed countries in order to carry out poverty eradication measures aimed at increasing productive employment both in urban and rural areas. Some major areas of immediate interest to the developing countries would be trade liberalization in agricultural goods, especially processed agricultural goods, textiles, and other labour-intensive light manufactures. These are primarily the areas in which small-sized enterprises, in both the urban and rural non-farm sectors, have the greatest comparative advantage. It has been estimated that liberalizing trade in agricultural commodities would yield an annual gain of $22 billion to developing countries and formerly centrally planned economies, and liberalizing trade in textiles would benefit developing countries to the tune of $50 billion a year, nearly equal to the total flow of foreign assistance. 17/

67. Technical assistance and the transfer of environmentally sound technologies deserve greater attention. Increasing the training component of technical assistance will help to develop human resources. In most countries technical assistance will be needed at various levels - training personnel to prepare poverty eradication projects, training people in various skills, training personnel to carry out area-specific agricultural research with a view to introducing technological innovation in agriculture, such as high-yield and drought-resistant seeds, training farmers to manage water resources efficiently, training micro-enterprises to market their export products and so on. To increase the effectiveness and efficiency of technical assistance, its mode of provision and its quality call for radical reform. Since developing countries are largely dependent on imports for their technology needs, sustainable development practices remain dependent on the transfer of environmentally sound technologies at affordable cost. Technical assistance must therefore be supplemented by the transfer of state-of-the-art environmentally sound technologies.

68. With regard to finance, bilateral official development assistance (ODA) should focus more on poverty eradication. It would be more effective if

targeted to investment in agricultural infrastructure meant to serve microfarmers and in employment creation for non-farm agricultural workers and urban workers. An increase in ODA is indispensable, especially in the short and medium terms if Governments are to build the necessary physical and social infrastructures.

69. The multilateral agencies and organizations of the United Nations system are all committed to poverty eradication but are constrained by lack of resources. Adequate funding of their programmes would greatly speed up poverty eradication.

70. For the highly indebted developing countries, where debt service represents a large proportion of government budgets and/or export earnings, debt relief, including debt forgiveness, will need to be an important component of external finance mobilized by the donor community to support programmes of poverty reduction.

## VI. REVIEW OF PROGRESS ACHIEVED: MAIN POLICY THRUSTS AND EXPERIENCES

### A. Country experiences in combating poverty

71. This section is based on the experiences of 13 developed countries, 8 developing countries and 3 countries in transition which submitted information on their national efforts to combat poverty to the preparatory process for the World Social Summit. Because of the limited country and regional coverage, the subsections on the developing countries and the countries in transition provide only a limited perspective of their current and/or planned efforts to combat poverty.

#### 1. Developed countries 18/

72. Generally, in the developed countries the poverty problem is one of relative poverty. It is characterized by social exclusion, not by a severe absence of the basic necessities of life. Underlying it is the lack of income necessary to purchase the socially defined "basket of goods and services" adequate to ensure "social insertion".

73. The problem of social exclusion is essentially chronic, but its incidence is correlated with economic cycles. One major contributory factor is prolonged unemployment, especially of youth, owing either to structural changes, including automation, or recession. A second factor is the increasing proportion of the aged. A third factor is discriminatory practices which affect women and minority groups, including ethnic minorities, immigrants, refugees and indigenous peoples in some countries. Women generally have a higher poverty risk than men. They enjoy less security of job tenure, earn less than men on average, and have lower pension entitlements and old-age benefits. Particularly affected are single women and single mothers. In some countries ethnic minorities of both sexes are among the most socially disadvantaged and socially and economically marginalized. Some countries have significant magnitudes of

localized stubborn poverty in economically weak rural and urban areas. In several developed countries, the shortage of public housing has emerged as a particularly serious problem, as evidenced by growing numbers of homeless people or people without adequate housing. Social exclusion is reflected in shattered self-confidence, alienation, mental problems, crimes against individuals and society, outbursts of localized violence, and other social ills.

74. Developed countries, by and large, have relatively high levels of social protection, which, however, seem to be inadequate to cope with the problems of social exclusion. The degree of concern about the problem varies from country to country, as do efforts to resolve it. Major proposed solutions, some combinations of which are actually in place in individual countries, include the improvement of labour market practices; greater emphasis to vocational training and links between business and training institutions; reform or strengthening of social protection measures; means testing to enhance the effectiveness of social security schemes; special programmes targeted to pockets of urban and rural poverty; guaranteed minimum incomes; severing the link between social protection spending and economic cycles; eliminating discrimination against women and minority groups; and specific programmes for specific groups of the disadvantaged - the disabled, the handicapped, single parents, old widows, needy children and indigenous peoples.

75. For eradication of poverty in the developing world, developed countries have generally indicated the need for improving the socio-economic policy framework; making development people-centred, with emphasis on meeting basic needs and building human resources; expansion of productive employment through the creation of small and medium-sized enterprises; greater democracy and decentralization of political authority, accompanied by special actions to deal with the particularly poor and vulnerable; encouragement of grass-roots participation; and involvement of women in the development process on an equal footing with men.

76. In view of the widening gap between the world's rich and poor, the Government of Denmark sees the need to persuade the wealthy nations to redistribute resources to the poorest in the world in order to help achieve common global goals - the meeting of basic needs and the prevention of environmental degradation. Along the same line, Italy favours the extension of cooperation to developing countries through technical and financial assistance in areas related to human development - to help establish local production companies for the purpose of utilizing the labour of the weakest sections of the population; to help implement WHO and UNICEF guidelines on health and social protection; to help implement the UNESCO recommendation on basic education, literacy, vocational training and awareness of local cultures; and to facilitate real participation of the people in choosing solutions to their priority problems and carrying out their activities. As a key measure for tackling the poverty problem at the international level, Liechtenstein advocates a system of social security understood as global welfare, with emphasis on combating hunger world wide. The Government of Finland sees the need for structuring the world economy more justly to take account of the needs of the poorest countries and for creating conditions at the national level for poor people to help themselves out of poverty. The Government of Sweden supports the view that the "peace dividend" be channelled to developing countries for social development and that

States should serve as the guarantor of human rights, civil liberties and basic economic stability. Some countries have stressed the need to reduce protectionism in industrialized countries and for further trade liberalization and debt reduction.

### 2. Developing countries 19/

77. Four countries (India, Indonesia, Mauritius and Pakistan) reported that during the 1980s, their poverty situation improved as a result of strong economic growth, assisted by poverty alleviation measures. Iraq reported that since the imposition of the international economic embargo, its poverty situation had deteriorated, owing to the deterioration of the economic situation in general, but did not elaborate on its poverty alleviation programme aside from mentioning that poverty alleviation is linked to the lifting of the embargo. All the reporting countries, and particularly the larger ones, recognize that large numbers of their citizens continue to live below the poverty line. They stressed the view that while broad-based economic growth would continue to be important for poverty eradication in the long run, it would be equally important for the Government to take direct action to improve the lot of the poor and prevent environmental degradation. Emphasis is invariably placed on both economic policy reform and social policy reform. According to the Government of Cuba, on the basis of the Cuban experience, it is possible to achieve social development before achieving full economic development and the former can promote the latter.

78. One major common policy goal of these countries is to accelerate productivity growth along with creative employment. To that end, with varying degrees of emphasis, they proposed the need for accelerating economic growth through appropriate policy reforms; modifying the structures of production, with greater emphasis on efficient labour-intensive activities; promoting the development of local enterprises; providing financial support and infrastructural facilities; increasing vocational training; revamping training systems to induce greater flexibility and responsiveness to labour market trends; and better distributing manpower through improved market information. A second common policy goal that was strongly emphasized is faster development of human resources, with an emphasis on expanding primary education, primary health care and sanitation, including safe drinking water. The provision of adequate housing and nutrition also figures prominently in country programmes. A third common feature of proposed action is emphasis on the need for fuller participation of the poor generally - and of women, in particular - in the implementation of governmental programmes and projects meant for the poor. Fuller participation of beneficiaries in anti-poverty projects is seen as an efficient way to speed up the implementation of those programmes while keeping the government budgetary burden light. Another common concern of the countries is the promotion of equity - interregional, rural/urban and gender - in the provision of social services. The provision of reproductive health care and family planning was emphasized by India and Indonesia, and a balance between access of all to social facilities and cost recovery, by Zimbabwe.

79. Generally, the country programmes are formulated within the framework of sustainable development. In the past two years national environmental action plans were completed in India, Mauritius and Pakistan. Zimbabwe initiated

measures to reduce land degradation through a land acquisition act which calls for a review of the existing land resettlement programme to ensure that it benefits the poor. In addition, manufacturing activities have been introduced in rural areas so as to take pressure off the land. In Pakistan, explicit steps have been taken to strengthen environmental management - for example, new ordinances have been passed that mandate higher environmental quality standards and decentralized responsibility for pollution control. In India, new national policies have been adopted to combat industrial pollution through strengthened regulations and fiscal incentives.

80. Some countries have specified targets in the social sphere. For instance, the eighth development plan of India aims at achieving universal primary education and health care by the year 2000. Mauritius, where primary enrolment has reached 98 per cent, is aiming for 100 per cent enrolment with appropriate provisions for handicapped children. Zimbabwe has set a goal of housing for all by the year 2000, reduction of child and infant mortality by 32 per cent and 50 per cent, respectively, by the year 2000, and access to education facilities to all children. Indonesia aims at reducing the number of the absolute poor by 12 million, or 6 per cent of the current population, during its second long-term development plan, launched in 1993. China aims at meeting the following targets by the year 2000: adequate supply of safe drinking water for all; elimination of illiteracy among young and middle-aged people; and prevention and elimination of local diseases.

### 3. Countries in transition 20/

81. All the countries in transition are facing poverty problems arising from the process of transition to market economies, which is characterized by a slowing-down of economic activities and decline in incomes. The privatization of State-owned enterprises has triggered an increase in unemployment. As a consequence, large numbers of people have been driven below the poverty line. In Croatia and Yugoslavia, the problem has been aggravated by destruction of the economy by civil war. In all three countries, it has become impossible to continue to provide social services at the levels achieved earlier and to meet the needs of refugees and the victims of war. The Government of all three countries have formulated new economic recovery programmes to rekindle growth and social programmes to protect the most vulnerable groups, but they are not optimistic about rapid economic and social recovery. Yugoslavia has reported that, at present, the international sanctions on it present a severe handicap to recovery.

### 4. Non-governmental organizations

82. Information was received from two non-governmental organizations, SIRF from Nigeria and ACEnet from the United States. The former has initiated a poverty alleviation programme which aims at providing credit through a revolving fund to needy women and youths who want to engage in sustainable projects and ventures, particularly small-scale trading. The organization has pointed out that its activities are severely constrained by lack of funds. The latter's objective is to enable people with low incomes in the Appalachian region successfully to

enter the economic mainstream by, inter alia, organizing cooperative ventures among small firms to produce for niche markets, mobilizing financial resources on behalf of the region from outside, creating learning clusters in conjunction with other communities in the country, providing transitional support for people moving from welfare to work, and developing production and leadership skills.

## B. Recent developments and experiences in international cooperation

### 1. Intergovernmental processes

83. Since the beginning of the decade a broad consensus has been emerging on the need for poverty eradication as a priority social objective and as a necessary condition for sustainable development in the intergovernmental processes of the United Nations system. In 1990 the World Summit for Children declared that the world had the means and the knowledge to protect the lives and diminish the sufferings of children and to promote the full development of their human potential, and it committed itself, inter alia, to work for a global attack on poverty which would have immediate benefits for children's welfare. The International Development Strategy for the Fourth United Nations Development Decade, 1991-2000, 21/ identified poverty eradication as the number one priority for the Decade and called on Member States to make every effort to meet four agreed goals during the decade: elimination of starvation and death caused by famine; substantial reduction of malnutrition and mortality among children; tangible reduction of chronic hunger; and elimination of major nutritional diseases.

84. In 1992 the Agenda for Peace linked economic growth to social stability, and social stability to broad-based socio-economic and political participation of people. It called for the empowerment of the unorganized, the poor and the marginalized. 22/ Concern about poverty eradication received much attention at the United Nations Conference on Environment and Development. Principle 5 of the Rio Declaration called on States and peoples to cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development. 23/ Agenda 21, which devoted an entire chapter to issues relating to poverty eradication, called for a specific anti-poverty strategy as one of the basic conditions for ensuring sustainable development. 24/ The International Conference on Nutrition declared that globally there was enough food for all and that inequitable access was the main problem. It recommended that policies and programmes be directed towards those most in need and that priority be given to the implementation of people-centred policies and programmes that would increase access to and control of resources by the rural and urban poor and would raise their productive capacity and increase and strengthen their capacity to care for themselves. 11/

85. In 1993, the World Conference on Human Rights affirmed that extreme poverty and social exclusion constituted a violation of human rights. It declared that the existence of widespread poverty inhibited the full and effective enjoyment of human rights and that its immediate and eventual elimination must remain a high priority for the international community. 25/ The General Assembly, which had proclaimed 1993 as International Year for the World's Indigenous

Peoples, 26/ with a view to strengthening international cooperation for the solution of the problems faced by indigenous communities in areas such as human rights, the environment, development, and education and health, proclaimed the International Decade of the World's Indigenous Peoples, commencing in 1994. 27/ It also designated 1996 as International Year for the Eradication of Poverty. 28/ Preparation for the Year is expected to concentrate on establishing effective links among the measures to implement poverty eradication strategies contained in recent and anticipated international agreements and reports.

86. In 1994, the Intergovernmental Negotiating Committee for a Convention to Combat Desertification recommended that the national programmes of affected country parties include, inter alia, provisions to promote alternative livelihoods and to improve national economic environments with a view to strengthening programmes aimed at the eradication of poverty and at ensuring food security, sustainable management of natural resources and sustainable agricultural practices. 16/ The Programme of Action of the International Conference on Population and Development, in which poverty is a recurring theme, has established linkages between population growth, poverty, development and environment and has elaborated in great detail on the rationale and modalities for slowing down population growth and eradicating poverty, which it has called the major challenge of development efforts. The report of the Secretary-General on an agenda for development (A/49/665), which may undergo revision before it is adopted by the General Assembly, states, inter alia, that the first goal of development must be to end poverty and satisfy the priority needs of all people in a way that can be productively sustained over future generations and calls on all countries to agree on a global compact to eliminate poverty over a specified period of time.

87. While the above constitute the major and most recent international efforts at combating poverty, some major efforts that go further back in time but remain relevant might also deserve a mention. Perhaps the first international reaction to the weak impact of the "trickle-down" approach on poverty alleviation was the convening in 1976 of the World Employment Conference which, at the initiative of the ILO, adopted the "basic needs" strategy, emphasizing productive employment creation as a solution to poverty eradication. This concept lingers on and is still relevant today. In 1978, the International Conference on Primary Health Care declared, inter alia, that a main social target of the world community should be the attainment by all peoples of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life. Health care for the poor remains a priority concern. In 1980, the General Assembly proclaimed the period 1981-1990 as the International Drinking Water Supply and Sanitation Decade, 29/ calling on Member States to assume a commitment to bring about a substantial improvement in the standards and levels of services in drinking water supply and sanitation by the year 1990. While much was accomplished in those areas in the decade, much more remains to be done.

88. In 1988 at the request of the General Assembly, Habitat, in collaboration with other United Nations organizations, formulated a Global Strategy for Shelter to the year 2000. The strategy focuses mainly on low-income population groups and is based on an "enabling approach". The objective is to assist the

large numbers of the homeless and those living in poor shelter and unhealthy neighbourhoods, whether in urban slums and squatter areas or in poor rural areas, to meet their housing needs. Both the principle underlying the strategy and its objectives are still relevant. There has been little progress in ensuring adequate housing for the poor, and therefore the challenge facing the Second United Nations Conference on Human Settlements (Habitat II) in 1996 and the international community is formidable.

89. A similar consensus on poverty eradication emerged in the preparatory processes for the World Social Summit and the Fourth World Conference on Women, both scheduled for 1995. Poverty eradication constitutes one of the three core issues of the Social Summit, and poverty and its burden on women are among the major issues of the World Conference.

90. The efforts of the intergovernmental processes of the United Nations system over the past several years have resulted in a variety of action-oriented plans, particularly in the social sectors, for the eradication of poverty. The plans comprise detailed policies and measures that are broadly convergent or complementary. Some of them also include time-bound targets in priority areas. Their implementation would go a long way towards eradicating poverty. To facilitate their effective implementation, it may be necessary to assemble, with full participation of all concerned entities of the United Nations system, all the pieces in a single, integrated operational framework with clear-cut priorities, time-bound targets in line with those set by the World Summit for Social Development in the most crucial areas, and well-defined responsibilities for national and international efforts.

### 2. Organizations of the United Nations system

91. The specialized agencies and organizations of the United Nations system whose mandates cover the economic and social sectors have increasingly called for greater efforts at combating poverty, and several of them have explored new approaches to that end. As far back as 1976 the ILO adopted its basic needs strategy of development to cope with the rising incidence of poverty. In the wake of structural adjustments and the consequent increase in the incidence of poverty in several developing countries, in 1987 UNICEF proposed "adjustment with a human face" to protect vulnerable groups in society during the transition to sustained growth. Reacting to the adverse consequences of structural adjustment on poverty in Africa, in 1989 the Economic Commission for Africa (ECA) expressed the view that orthodox adjustment programmes were ignoring basic structural factors which had to be taken into account if economic growth and socio-economic transformation were to be achieved. It proposed an alternative framework - namely, adjustment with transformation, having the goal of transforming the African economy from primarily an exchange economy to a human-centred production economy. In 1989, the International Monetary Fund (IMF) proposed the concept of "high-quality growth", calling for equitable growth with particular attention to the plight of the poor and the vulnerable and to environmental protection.

92. The United Nations development community has continued to press for development strategies that feature poverty reduction, with increasing

importance in the past few years given to broad-based participation and environmental sustainability. For instance, in 1990, the World Bank proposed a strategy of "poverty-reducing growth", emphasizing among other things broad-based economic growth which would generate opportunities for the poor, along with improved access to education, health care and the other social services necessary for the poor to take advantage of those opportunities. In the same year, the Committee for Development Planning observed that persistent poverty was the product of inappropriate structures and poor policies and that, in the past, anti-poverty programmes had largely been symbolic. It proposed an "enabling" set of measures aimed at enabling the poor to help themselves out of poverty. Since 1990, UNDP has suggested that growth is necessary but not sufficient for human freedom of choice and human development. It has consistently emphasized the need for human development and poverty eradication as necessary conditions for sustainable growth and environmental protection. In 1992, IFAD proposed a "new development paradigm" which propounds an approach to poverty alleviation not just as a mechanism to get the poor to cross a given threshold of income or consumption but one that is conducive to sustained increase in productivity and integration of the poor in the process of growth. The work of UNCTAD's Standing Committee on Poverty Alleviation is focused on the need to expand international trade as a means of poverty reduction.

93. The broadly common major elements of the foregoing strategies include the following: a macroeconomic policy conducive to broad-based growth; access of the poor to productive resources, particularly land and credit; adequate rural and urban infrastructures; human resources development, with an emphasis on education and training, health and sanitation, including safe drinking water; social safety nets to protect the vulnerable during structural adjustments; an enabling democratic environment favourable to fuller participation in the process of socio-economic development by the poor, including women; appropriate population policies; environmentally sustainable use of resources with poverty eradication itself seen as a necessary condition for the sustainable use of resources, particularly land; and a favourable and supportive international economic environment.

94. It is well known that the following agencies and organizations have long espoused and worked towards achieving, among other things, these goals: UNESCO, eradication of illiteracy, equal educational opportunities for all and job training for adults; WHO, universal access to health care, including sanitation and safe drinking water; UNICEF, adequate nutrition and health care for children; UNFPA, rapid demographic transition through the provision of reproductive health care and family planning services; Habitat, adequate shelter and related services for the poor; FAO, rural development, including afforestation and reforestation and agro-industries; UNIDO, rural industrialization, including agro-industries, transfer of appropriate technology and promotion of small- and medium-sector enterprises in manufacturing; IFAD, assistance to poor farmers; ILO, support for small enterprises and employment-intensive technologies accessible to the poor; UNDP, capacity-building; World Bank, expansion of opportunities by opening up markets, financial and technical assistance, and policy guidance. All these endeavours are clearly complementary and fit in neatly with the broader strategies mentioned above and with the objectives of sustainable development.

95. The development strategies proposed by the United Nations development community in recent years are convergent on the need for greater efforts at poverty eradication. All of them emphasize enabling measures and are in agreement that, while economic growth will continue to be important, the trickle-down approach will not be sufficient for poverty eradication and sustainable development. They are increasingly incorporating elements of environmental sustainability and bottom-up approaches to development into their work.

## C. Organizations outside the United Nations system

### 1. Organisation of Economic Cooperation and Development

96. OECD addresses the poverty issue implicitly rather than explicitly. Its mandate includes provision of support to developing countries in the building of broad-based indigenous human and institutional capacities necessary to bring those countries and their peoples out of poverty. In the context of development cooperation, it emphasizes three broad goals: broad-based and environmentally sustainable growth; participatory development; and the slowing down of population growth.

97. Based on the poverty and development debate of the past two decades, the organization has identified the following as key issues for growth and equity: reorientation of economic strategy from a capital-intensive State-based strategy to a small-producer market-based strategy; correction of policy distortions; redesign of the provision of public services to enhance equity; empowerment of women; land-tenure arrangements; and population control. It recognizes that the integration of environmental concerns into development projects and programmes, while increasing benefits, will often result in increased costs requiring the mobilization of additional financial resources and technological transfers from donors.

98. OECD has become particularly interested in supporting the strengthening of broader participation of all people in the development process, through empowerment based on democratic principles, local participation at the grass-roots level, and the decentralization of decision-making; and in encouraging equal access of women to education, health and training. Participatory approaches can be assisted, inter alia, by the provision of support for decentralization programmes to the local government level and for enabling the participation of all groups at that level; by sensitizing recipient-country decision makers and aid agency staff to participatory approaches, and by responsive government.

### 2. European Community

99. The European Community has reported that, at the end of 1992, more than 50 million of its citizens were living in poverty and 17 million workers were unemployed. Both poverty and unemployment have grown since 1980. Poverty is therefore a major concern. Action to fight poverty and social exclusion is mainly the responsibility of the member States. However, within the constraints

of its powers and resources, EC has regularly contributed to whatever initiatives member States have taken to ensure that all citizens play an active part in building the Community.

100. Since 1975, the Community has launched three successive framework programmes to combat poverty and social exclusion. In September 1993, the Commission of EC proposed a new programme to combat social exclusion and promote solidarity; it has yet to be adopted by the Council of Ministers. The Commission also endeavoured to develop a set of more ambitious and coherent initiatives, such as a recommendation on the right of all citizens to sufficient resources to live in human dignity. It was adopted by the Council of Ministers on 24 June 1992. A solemn declaration on the rights of excluded people is being finalized.

101. The Commission now supports and cooperates with a large number of non-governmental organizations in fighting poverty. This support is largely channelled through the European federations, or platforms, of non-governmental organizations. In addition, the Commission consults with social partners (employers and trade unions), anti-poverty non-governmental organizations and the European Platform for Family Organizations on specific social exclusion issues and initiatives.

## VII. CONCLUSIONS

102. The major conclusions of the present report are the following:

(a) A broad consensus has emerged over the years on the urgency of addressing the elusive and persistent problem of poverty and its deleterious implications for environmental integrity. This consensus is mirrored in the policy proposals of the United Nations agencies and organizations with mandates in the economic and social sectors. What is needed now is thorough-going and systematic action to implement their recommendations in a reasonable time-frame, taking into account the targets set at the World Social Summit;

(b) While economic growth will continue to be important, both to raise the general standard of living and to combat poverty in the long run in developing countries, reliance cannot be placed on growth that is based solely on market forces, either to combat poverty or to ensure environmental sustainability. There is an urgent need to implement an explicit poverty-reducing growth strategy that incorporates measures to ensure environmental sustainability;

(c) Just as measures to combat poverty need to be environmentally sound, the eradication of poverty is a necessary condition for sustainable development. The eradication of poverty is also essential for long-term socio-political stability - itself a precondition for sustained socio-economic development. People must be prevented from overexploiting and thus degrading natural resources out of sheer desperation to survive;

(d) The persistence of mass poverty is a reflection of socio-political structures and socio-economic policies and measures which have failed to redistribute the benefits of growth to high proportions of the population and

prevented them from participating productively in the development of their countries. Efforts to eliminate poverty, therefore, should not be viewed as acts of charity towards the poor but rather as a compelling economic necessity to mobilize the productive potential of the poor for the benefit of the poor themselves and of society generally;

(e) In order to eradicate poverty and achieve environmental sustainability, it will be necessary to shift from traditional top-down approaches to development, which often amount to the imposition of a social welfare system, as seen by a few, on the entire society, to bottom-up approaches. This calls for the full participation of all citizens in socio-political processes and in the planning and implementation of socio-economic development programmes. Full participation of all will require the creation of an enabling political environment, decentralization of decision-making to the local level, and explicit measures to empower the poor in general and women in particular, so that they may be able to include their socio-economic priorities in national, regional and local development plans and participate fully in the implementation of those plans;

(f) In developing countries the success of even the most promising strategies to eradicate poverty and safeguard environmental integrity will depend crucially on the extent of international cooperation, especially in terms of international trade, transfer of environmentally sound technologies, and financial and technical support;

(g) Governments should implement, as a matter of urgency, the recommendations contained in chapter II, "Eradication of poverty" of the Programme of Action adopted at the World Summit for Social Development; 30/

(h) In the future the Commission on Sustainable Development may wish to restrict its attention to the linkages between poverty and the natural environment, including those identified by the Social Summit. Some possible themes could be:

(i) Protection of the health of the urban poor from environmental stress;

(ii) Promotion of opportunities for small farmers and other poor agricultural, forestry and fishery workers on terms that respect sustainable development;

(iii) Environmental protection and resource management in resource-poor and environmentally fragile regions, in particular marginal lands where large numbers of the poor are located;

(iv) Afforestation and reforestation for environmental protection and for meeting the fuelwood needs of the poor;

(v) Promotion of non-farm rural industries to provide productive employment to the poor so as to relieve the pressure on marginal lands and halt deforestation;

(vi) Development of sanitary sewage disposal facilities for the poor so as to prevent water pollution.

Notes

1/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex II.

2/ World Development Report, 1992 (Washington, D.C., World Bank, 1992), p. 30.

3/ U. Simonis and others, Poverty, Environment and Development (Berlin, Wissenschaftszentrum Berlin, 1992), p. 4.

4/ Ibid., p. 15.

5/ WHO, Draft Report of the Commission on Health and Environment, 1991, p. 31.

6/ World Development Report ..., p. 29.

7/ IFAD, The State of World Rural Poverty (Rome, 1992), p. xx.

8/ World Travel and Tourism Council, Travel and Tourism's Economic Perspective (Brussels, 1995), pp. 4-8.

9/ See report of the World Conference on Education for All (Jomtien, 5-9 March 1990 (E/ICEF/1990/L.4).

10/ See UNIDO/IOD.255.

11/ See Report of the International Conference on Nutrition, Rome, 5-11 December 1992 (Rome, FAO, 1992).

12/ General Assembly resolution 42/191 of 11 December 1987.

13/ See Report of the International Conference on Population and Development, Cairo, 3-13 September 1994 (A/CONF.171/13 and Add.1).

14/ S. Davis and others, "Promoting the development of indigenous people in Latin America", Finance and Development (March 1994), p. 38.

15/ S. Davis and others, loc. cit., p. 38.

16/ See A/AC.241/27.

17/ Human Development Report, 1994 (New York, Oxford University Press, 1994), pp. 66-67.

18/ Austria, Australia, Denmark, Finland, France, Germany, Italy, Japan, Liechtenstein, Portugal, Spain, Sweden, United Kingdom.

19/ China, Cuba, India, Indonesia, Iraq, Mauritius, Pakistan and Zimbabwe.

20/ Croatia, Latvia and Yugoslavia.

21/ General Assembly resolution 45/199 of 21 December 1990.

22/ General Assembly resolution 47/120 of 18 December 1992.

23/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex I.

24/ Ibid., annex II.

25/ See A/CONF.157/24 (part I).

26/ General Assembly resolution 45/164.

27/ General Assembly resolution 48/163.

28/ General Assembly resolution 48/183.

29/ General Assembly resolution 35/18.

30/ To be issued as document A/CONF.166/9.

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